# Contents


Identifying A-dec Tubing . . . . . .PR-2
Identifying Tubing Functions . . . . . .PR-3
Locating Serial/Model Number Labels . . . . . .PR-7
Troubleshooting Performer I Chair . . . . . .PR-13
Troubleshooting Performer II Chair . . . . . .PR-19
Adjusting the Hydraulic Manifold . . . . . .PR-25
Installing a Solenoid . . . . . .PR-26
Correcting Hydrostatic Lock . . . . . .PR-28
Testing and Programming the Circuit Board . . . . . .PR-34
Testing Factory Defaults . . . . . .PR-35
Identifying New Features . . . . . .PR-38
Using the Headrest . . . . . .PR-44
Removing the Helical Drive Shaft . . . . . .PR-47
Adjusting the Base Positioning Potentiometer . . . . . .PR-49
Adjusting the Base Up Limit Switch . . . . . .PR-50
Programming the Chair . . . . . .PR-51
Programming Function 3 . . . . . .PR-52
Troubleshooting Foot Controls . . . . . .PR-73
Troubleshooting the Control Block . . . . . .PR-79
Troubleshooting Syringes . . . . . .PR-83
Working with the Holder Valve Assembly . . . . . .PR-84
Activating the Holder Valve . . . . . .PR-87
Adjusting the Accessory Tray Holder Height . . . . . .PR-88
Adjusting the Accessory Tray Holder Arm Tension . . . . . .PR-88
Adjusting the Light Head Vertical Tension . . . . . .PR-91
Adjusting the Light Head Horizontal Tension . . . . . .PR-91
Focusing the Light . . . . . .PR-91
Adjusting the Flexarm . . . . . .PR-92
Troubleshooting Dental Lights . . . . . .PR-93
Troubleshooting Cuspidors . . . . . .PR-99
Troubleshooting Air Vacuum Generator . . . . . .PR-103
Troubleshooting Water Saliva Ejectors . . . . . .PR-111
Adjusting Holder Tension . . . . . .PR-120
Adjusting Tension on the Assistant's Arm . . . . . .PR-120
Troubleshooting Assistant's Instrumentation . . . . . .PR-121

This section provides descriptions, service, maintenance, adjustment, and troubleshooting detail on the Performer product line.

## Identifying A-dec Tubing

This section identifies the tubing type used when servicing A-dec products. Allow adequate length when installing to avoid crimping or bending of tubing. The use of the appropriate tools can improve the ease of tubing installation or replacement.

### Using Suggested Fittings

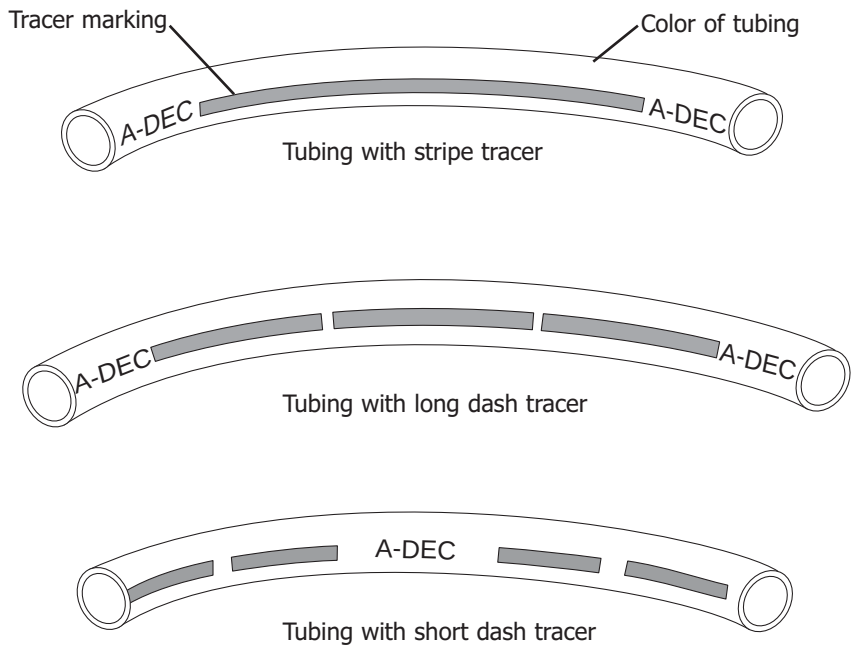
Unit-clamps or tubing sleeves must be used to ensure a good seal and to prevent tubing from coming off barbs.

For 1/4" polyurethane tubing, use 1/4" barbs with sleeves and 1/4" Poly-Flo fittings.

For 3/8" Polyurethane tubing, use 3/8" Poly-Flo fittings.

### Identifying Detail

When identifying tubing, the body color of the tubing is the “tubing color”. The line and/or the A-dec name printed on the tubing are the “tracer markings”. These two details will identify the type of tubing you will need and its use.



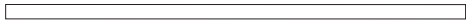

**Tubing Identification Details**

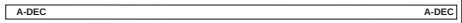
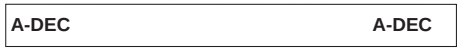
## Identifying Tubing Functions

When installing or replacing tubing, allow enough length to avoid crimping or bending. Unit-clamps or tubing sleeves must be used to ensure a good seal and to prevent tubing from coming off barbs. The following table lists the different types of tubing and its function.

| Tubing Function | Description | Tubing Color | Part Number |
|---|---|---|---|
| Unregulated Air | Continuous, filtered, unregulated air — 1/8" OD from the air regulator to On/Off toggle | | 036.013.03 |
| Pilot Air | Filtered unregulated air controlled by Master On/Off toggle —1/8" OD | | 036.009.04 |
| Regulated Air Supply | Continuous, filtered, regulated air —1/8" OD | | 036.003.03 |
| Regulated Air Supply | Regulated air — 3/8" OD | | 036.103.03 |
| Regulated Air Supply | Regulated air — 3/8" OD | | 036.031.02 |
| Regulated Air (40 psi) | Regulated air at 40 psi to pressurize the water bottle — 1/8" OD | | 036.044.03 |

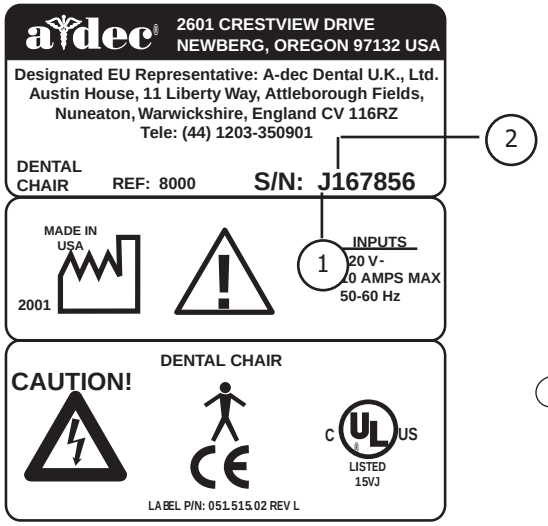
| Tubing Function | Description | Tubing Color | Part Number |
|---|---|---|---|
| Drive Air | Drive air for pressure gauge — 1/8" OD | | 036.010.03 |
| Drive Air | Drive air for foot control — 1/4" OD | | 036.052.03 |
| Drive Air | Handpiece drive air (clear) — 1/4" OD | | 036.066.03 |
| Chip Blower Air | Air for chip blower — 1/8" OD | | 036.014.02 |
| Signal Air, Coolant Air | Signal air/air coolant from foot control, signal air for cuspidor cup filler and vacuum actuator — 1/8" OD | | 036.006.03 |
| Signal Air, Water Coolant | Signal air/water coolant from foot control, signal air for cuspidor bowl rinse — 1/8" OD Signal | | 036.018.03 |

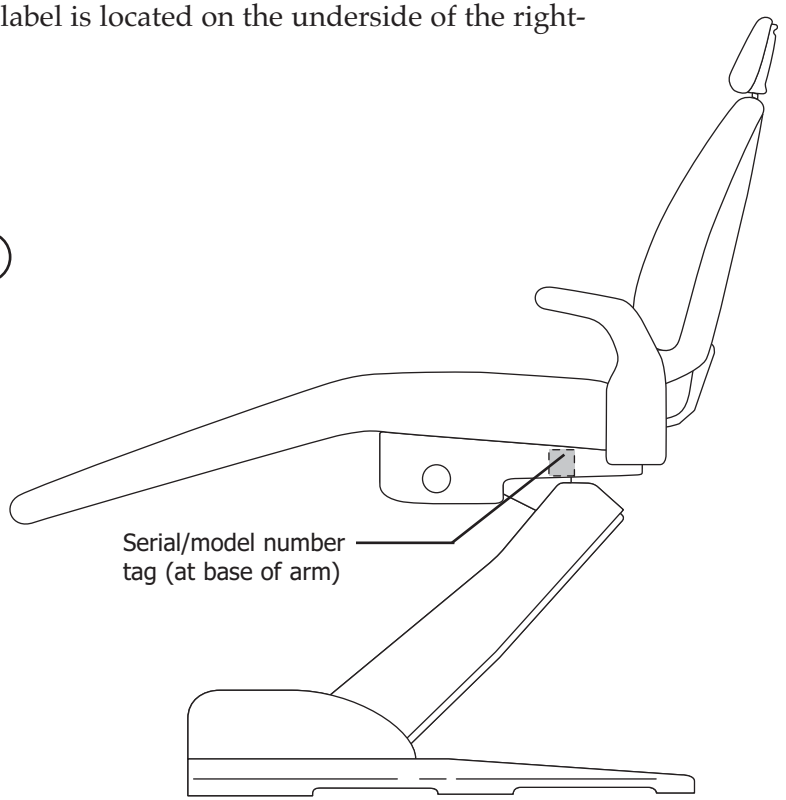
| Tubing Function | Description | Tubing Color | Part Number |
|---|---|---|---|
| Signal Air, Coolant Water | Signal air (clear) from foot control relay to wet/dry toggle — 1/8" OD |  | 024.015.04 |
| Water Supply | Coolant water supply, handpiece water — 1/8" OD | | 036.004.03 |
| Oral Cavity Water | Oral cavity water — 1/8" OD | | 036.005.03 |
| Water Supply | Regulated water, water to bowl rinse — 1/4" OD | | 036.053.03 |
| Water Supply | Unregulated water — 3/8" OD | | 036.033.02 |
| Return Water | Return water, tank water heater, water to gravity drain drip tube from syringes — 1/8" OD | | 036.011.03 |

| Tubing Function | Description | Tubing Color | Part Number |
|---|---|---|---|
| Miscellaneous | Miscellaneous line (white) for use with A-dec authorized accessories — 1/8" OD |   | 036.019.03 |
| Hydraulic System Supply | Low pressure hydraulic system supply for chair (clear) — 3/8" OD |   | 036.035.00 |

## Locating Serial/Model Number Labels

The serial/model number label identifies the chair model and the month and year in which the chair was manufactured. This label is located on the underside of the right-hand arm rest support.

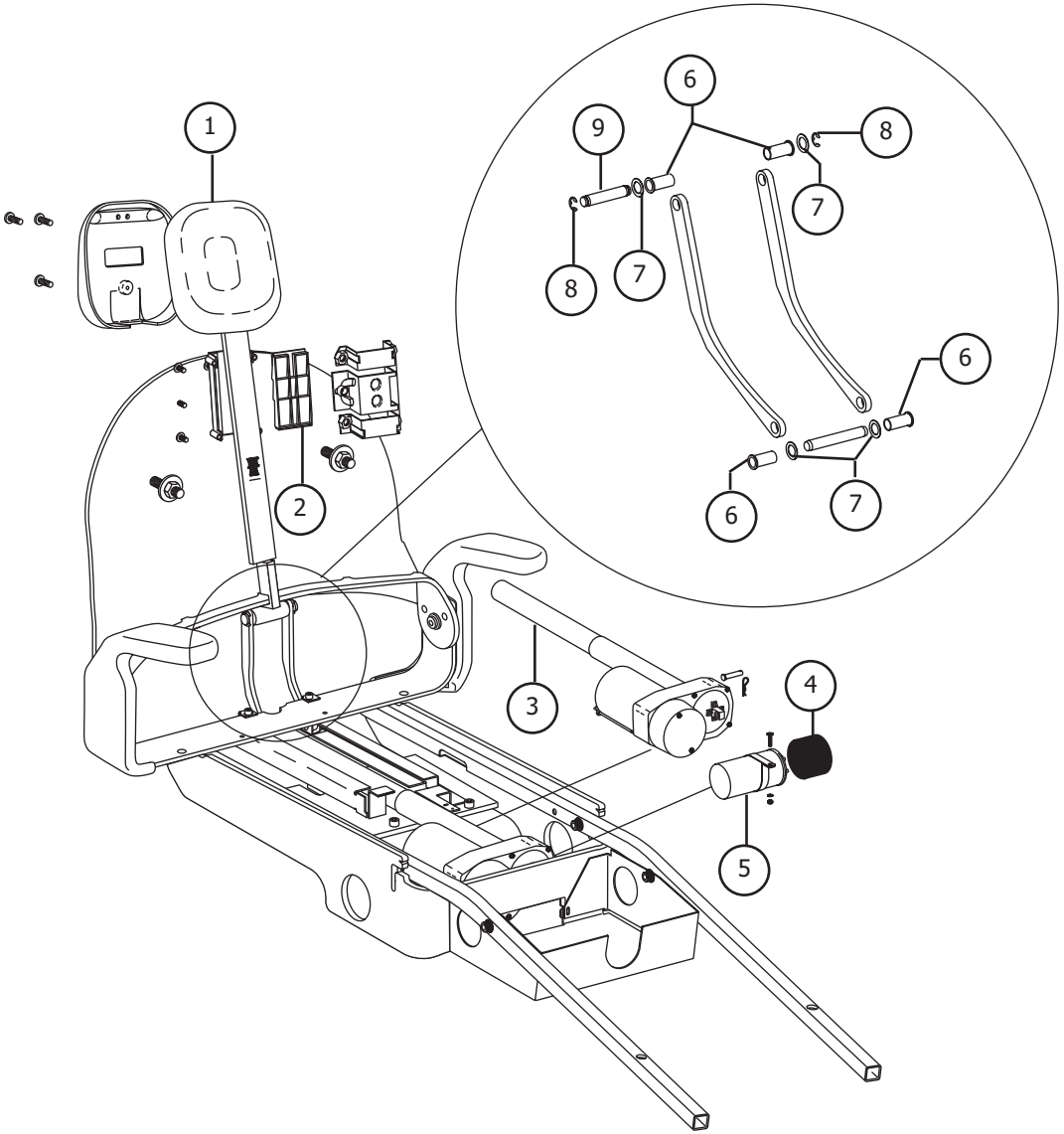



| Item # | Description |
|---|---|
| 1 | Month of manufacture |
| | The first letter of the serial number indicates the month the product was manufactured; e.g., A is January. |
| 2 | Last digit of the year manufacture |

## Performer I Upper Structure

| Item # | Part Number | Description |
|---|---|---|
| 1 | (Obsolete) | Single articulating headrest |
| | 61.2116.XX | Double articulating headrest |
| 2 | 61.1569.00 | Wear pad, sliding wedge molded |
| 3 | 61.2409.00 | 115V tilt actuator |
| 3 | 61.2410.00 | 230V tilt actuator |
| 4. | 041.529.00 | Capacitor boot |
| 5 | 90.1035.00 | 115V tilt actuator capacitor |
| | 90.1036.00 | 230V tilt actuator capacitor |
| 6 | 61.2181.00 | Bearing, flanged |
| 7 | 004.035.00 | Washer, flat, nylatron |
| 8 | 010.040.01 | E-ring, retaining |
| 10 | 61.2425.00 | Pivot pin, back link |

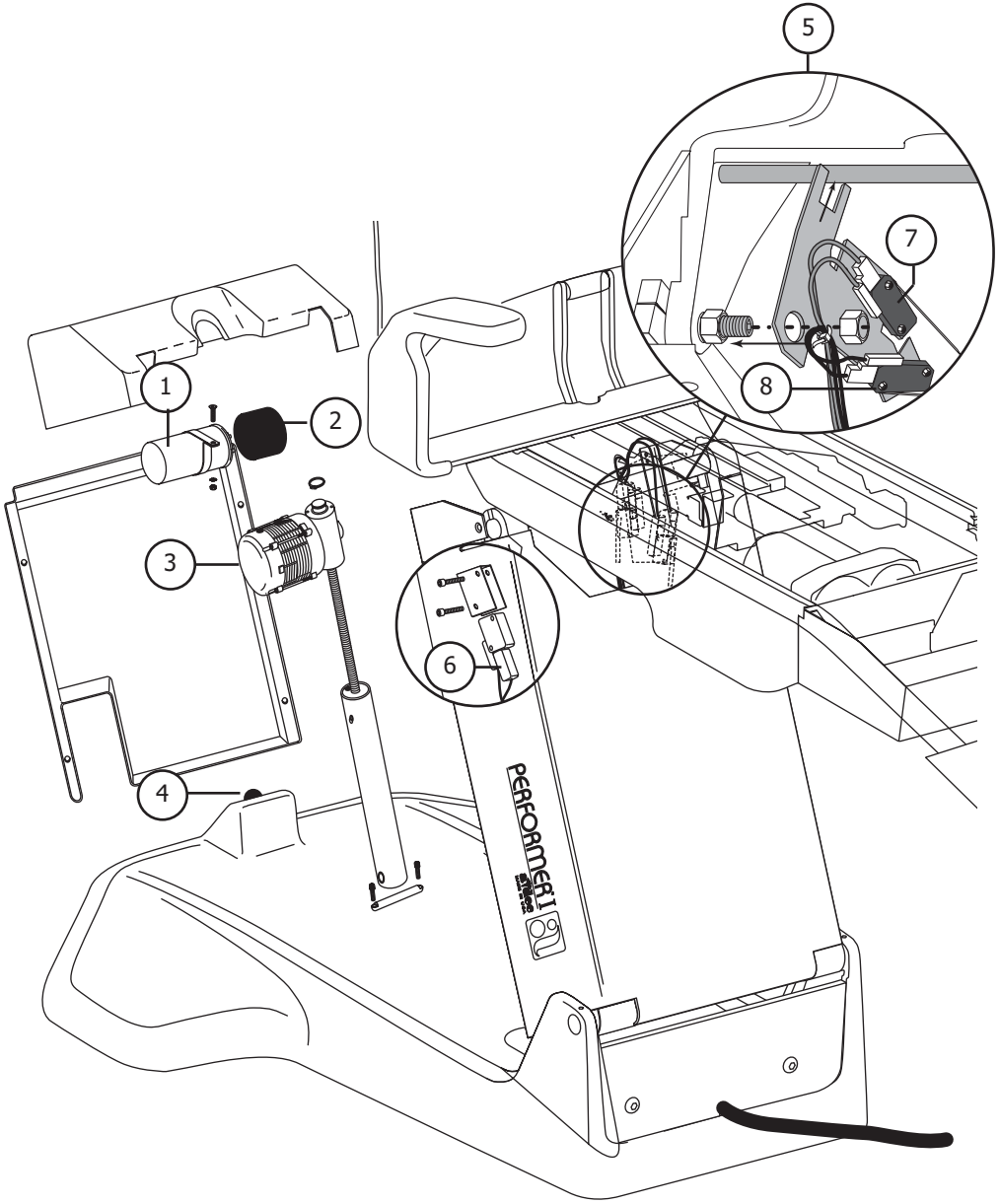



**WARNING**

High voltages are present at motor and limit switch connections. Unplug the chair before servicing. Failure to do so could result in serious injury.

## Performer I Base Structure

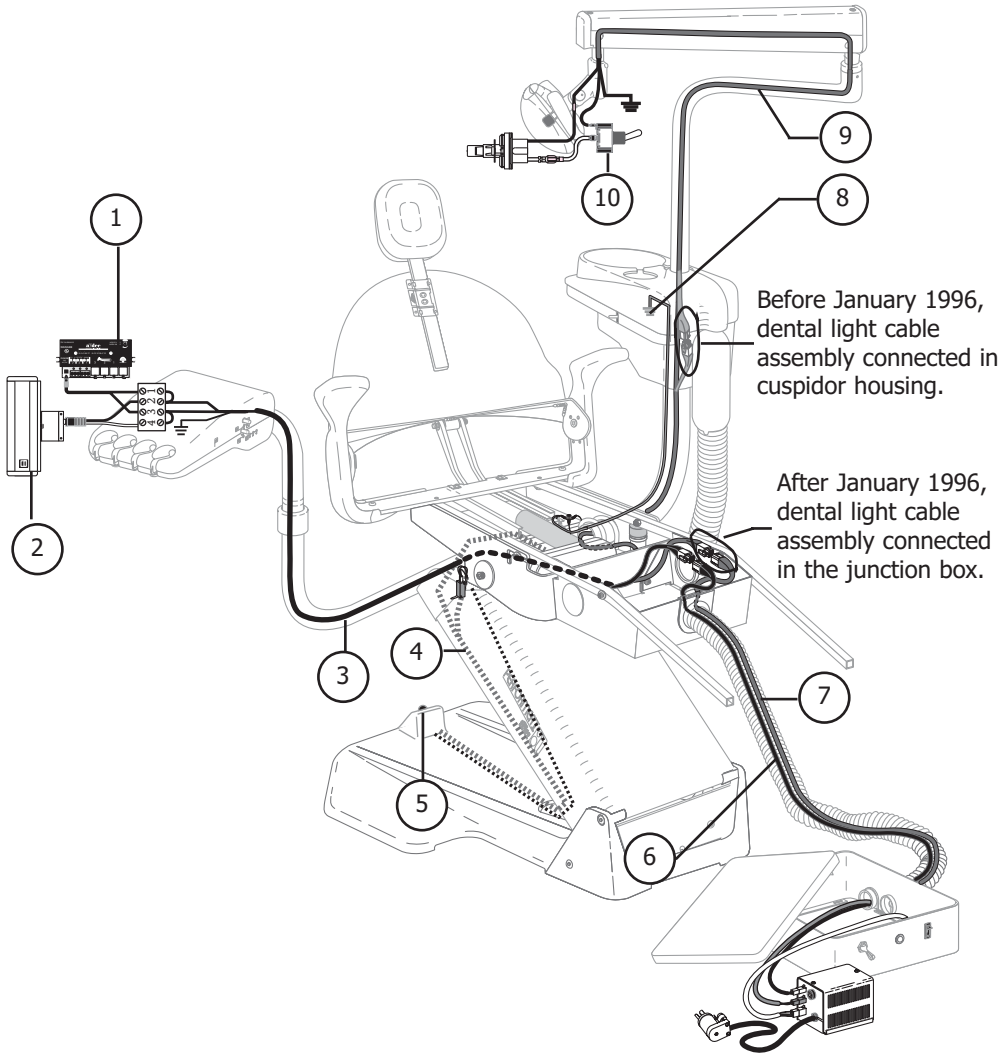
| Item # | Part Number | Description |
|---|---|---|
| 1 | 041.583.00 | 240V base capacitor (after June 1998) |
| — | 041.517.00 | 240V base capacitor (before June 1998) |
| — | 041.504.00 | 440V base capacitor |
| 2 | 041.529.00 | 115V capacitor boot |
| 3 | 61.2469.00 | 115V base actuator |
| — | 61.2470.00 | 230V actuator |
| 4 | 61.2483.00 | Joystick chair control |
| 5 | 90.1000.00 | Base limit switch kit |
| 6 | 044.183.00 | Base down, shutoff switch |
| 7 | 044.184.00 | Base up limit switch (Red) |
| 8 | 044.184.00 | Base down limit switch (Black) |



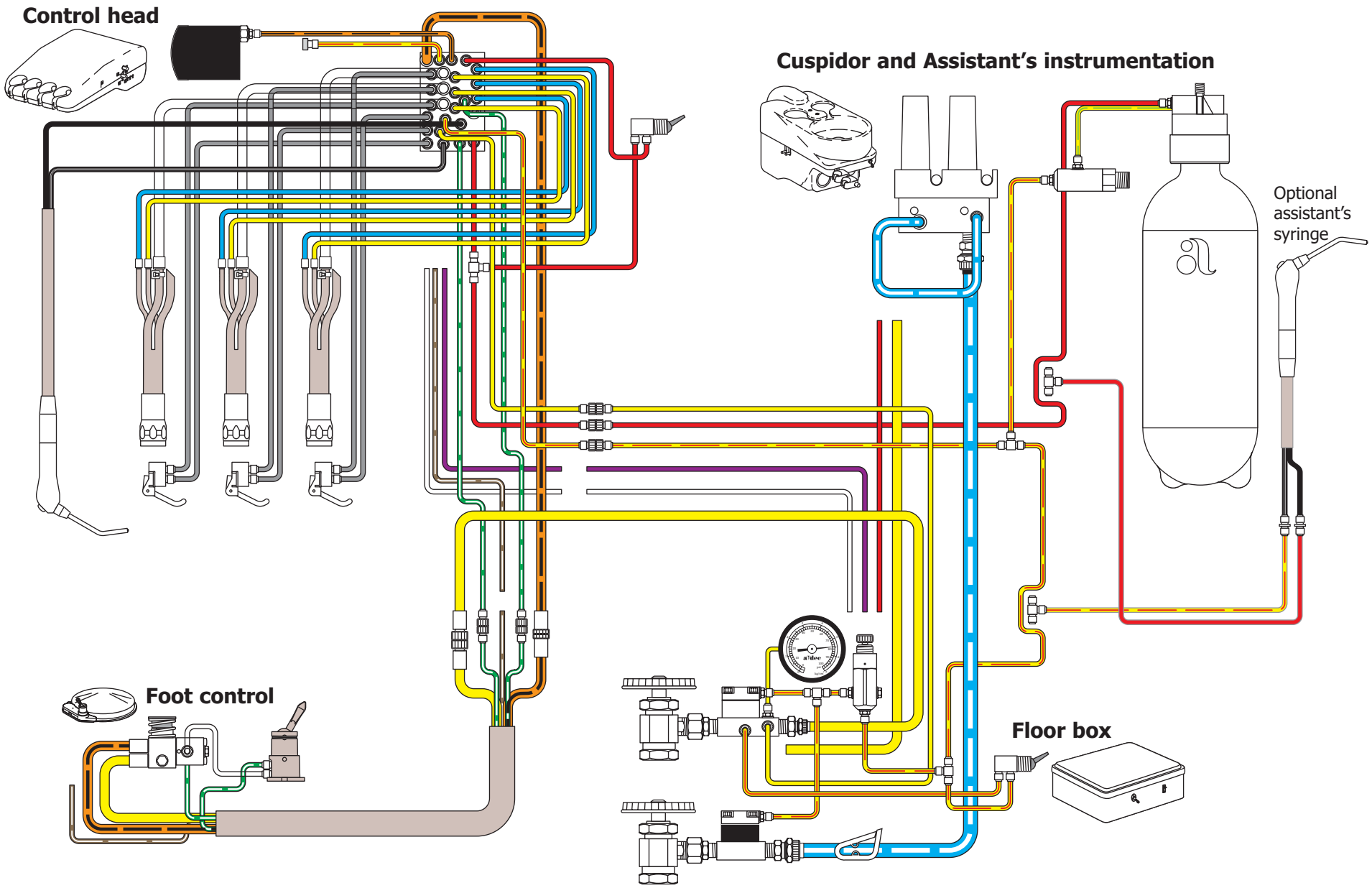

**NOTE**: If the chair limit switch bracket assembly is not located in the upper lift arm of the chair, it will need to be replaced with a base limit switch kit, P/N 90.1000.00.

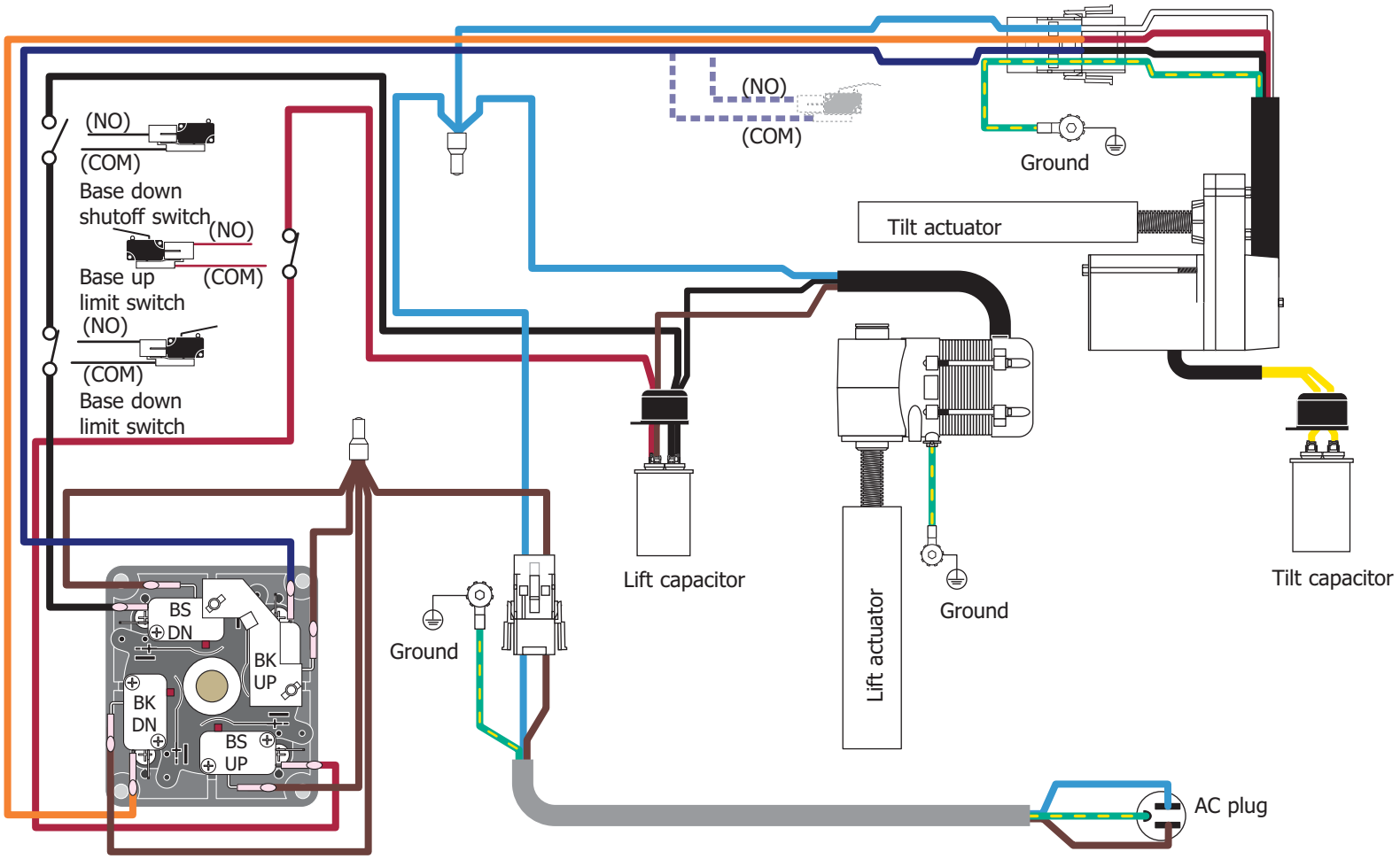
## Performer I Electronics

| Item # | Part Number | Description |
|---|---|---|
| 1 | 76.1005.00 | Intra-oral light source kit |
| 2 | 76.8000.00 | Bitewing x-ray viewer |
| 3 | 35.1673.00 | Cable assembly |
| 4 | 61.2582.00 | Wire harness assembly |
| 5 | 61.2483.00 | Joystick, auto exit |
| 6 | 35.1567.00 | Cable assembly |
| 7 | 28.1244.00 | Cable assembly, dental light |
| 8 | 41.1444.00 | Ground wire assembly (after April 1999) |
| 9 | 90.1054.00 | Cable assembly |
| 10 | 90.1039.00 | On/Off switch |



# Performer I Flow Diagram






**Joystick (viewed from the bottom)**

**WARNING**

High voltages are present at motor and limit switch connections. Unplug the chair before servicing. Failure to do so could result in serious injury.

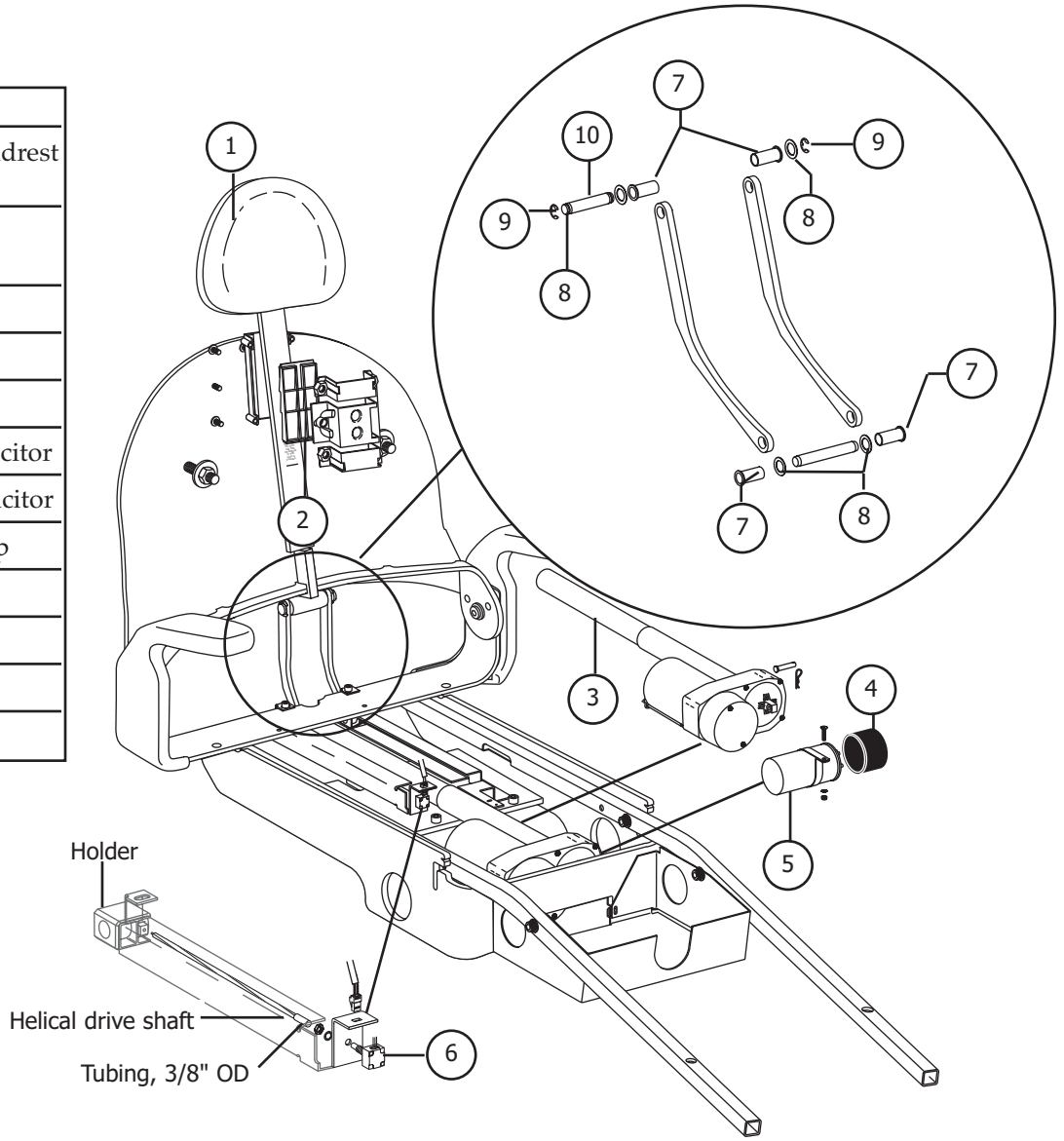
## Troubleshooting Performer I Chair

Tips and troubleshooting information are listed to assist in distinguishing Performer I chair problems.

| Problem | Action |
|---|---|
| Chair back is inoperative | Follow these steps to determine the problem with the chair back.<br>**Task** **Description**<br>1 Make sure system power is ON.<br>2 Check power and connections.<br>3 Check for bad capacitors. |
| Chair base is inoperative | Follow these steps to determine the problem with the chair base.<br>1 Make sure system power is ON.<br>2 Check power and connections.<br>3 Check for bad capacitors. |
| Noisy motor | Follow these steps to check the motor.<br>1 Check for loose mounts.<br>2 Adjust base screw drive nut.<br>3 Replace motor. |

## Performer II Upper Structure

| Item # | Part Number | Description |
|---|---|---|
| 1 | — | Single articulating headrest |
| 2 | 61.1569.00 | Wear pad, sliding wedge molded |
| 3 | 61.2409.00 | 115V tilt actuator |
| | 61.2410.00 | 230V tilt actuator |
| 4 | 041.529.00 | Capacitor boot |
| 5 | 90.1035.00 | 115V tilt actuator capacitor |
| | 90.1036.00 | 230V tilt actuator capacitor |
| 6 | 041.372.00 | Potentiometer, back up |
| 7 | 61.2181.00 | Bearing, flanged |
| 8 | 004.035.00 | Washer, flat, nylatron |
| 9 | 010.040.01 | E-ring, retaining |
| 10 | 61.2425.00 | Pivot pin, back link |



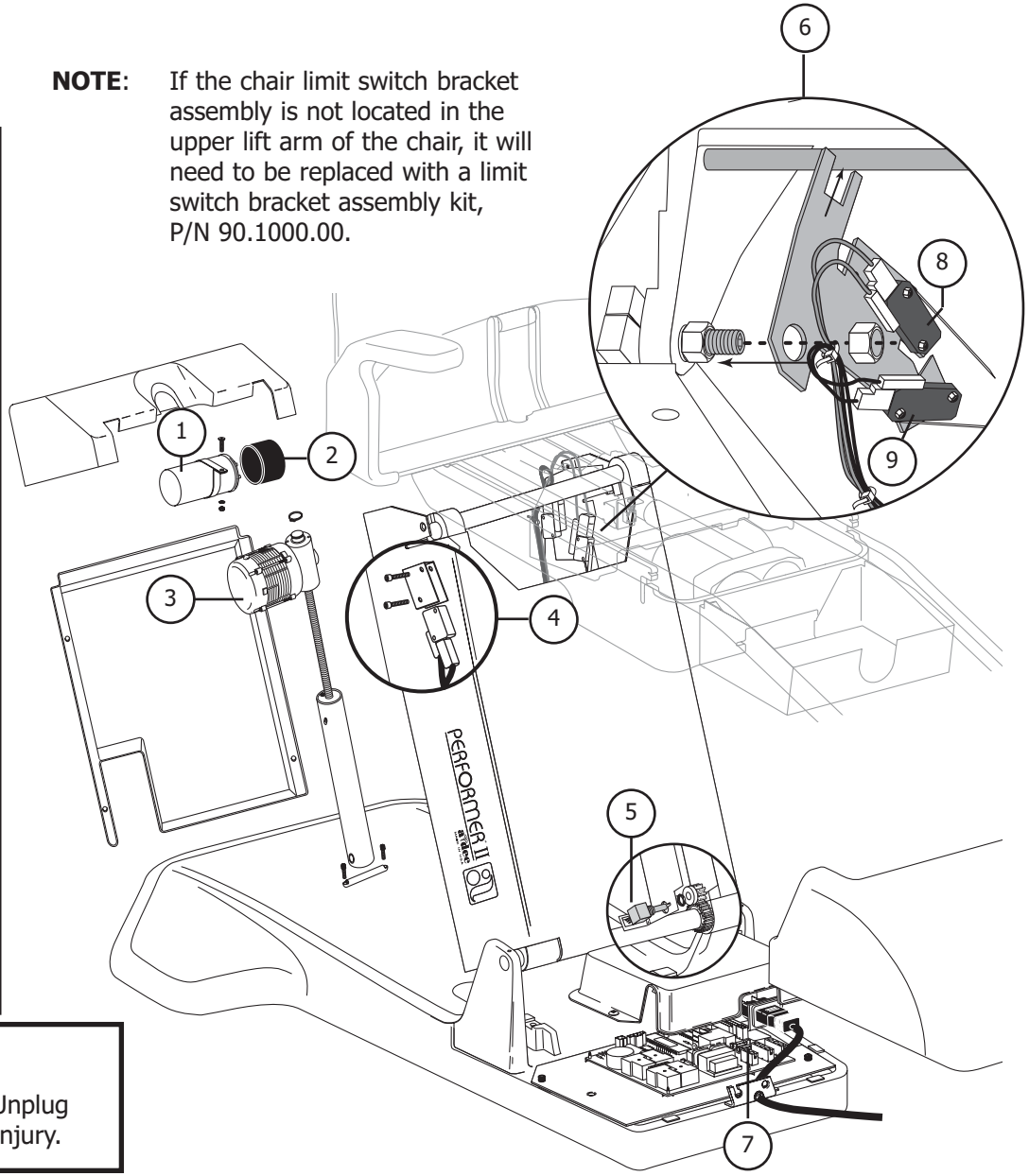

**WARNING**

High voltages are present at motor and limit switch connections. Unplug the chair before servicing. Failure to do so could result in serious injury.

## Performer II, Base Structure

| Item # | Part Number | Description |
|---|---|---|
| 1 | 041.583.00 | 240V base capacitor (after June 1998) |
| | 041.517.00 | 240V base capacitor (before June 1998) |
| | 041.504.00 | 440V base capacitor |
| 2 | 041.529.00 | 115V capacitor boot (after June 1998) |
| | 041.529.00 | 115V capacitor boot (before June 1998) |
| 3 | 61.2469.00 | 115V base actuator |
| | 61.2470.00 | 230V base actuator |
| 4 | — | Base down shutoff switch |
| 5 | 041.372.00 | Potentiometer, base up |
| 6 | 90.1000.00 | Base limit switch kit |
| 7 | 90.1029.00 | 100V/120V, PCB, chair |
| | 90.1029.01 | 220V/240V, PCB, chair |
| 8 | 044.184.00 | Base up limit switch (Red) |
| 9 | 044.184.00 | Base down limit switch (Black) |

**NOTE**: If the chair limit switch bracket assembly is not located in the upper lift arm of the chair, it will need to be replaced with a limit switch bracket assembly kit, P/N 90.1000.00.

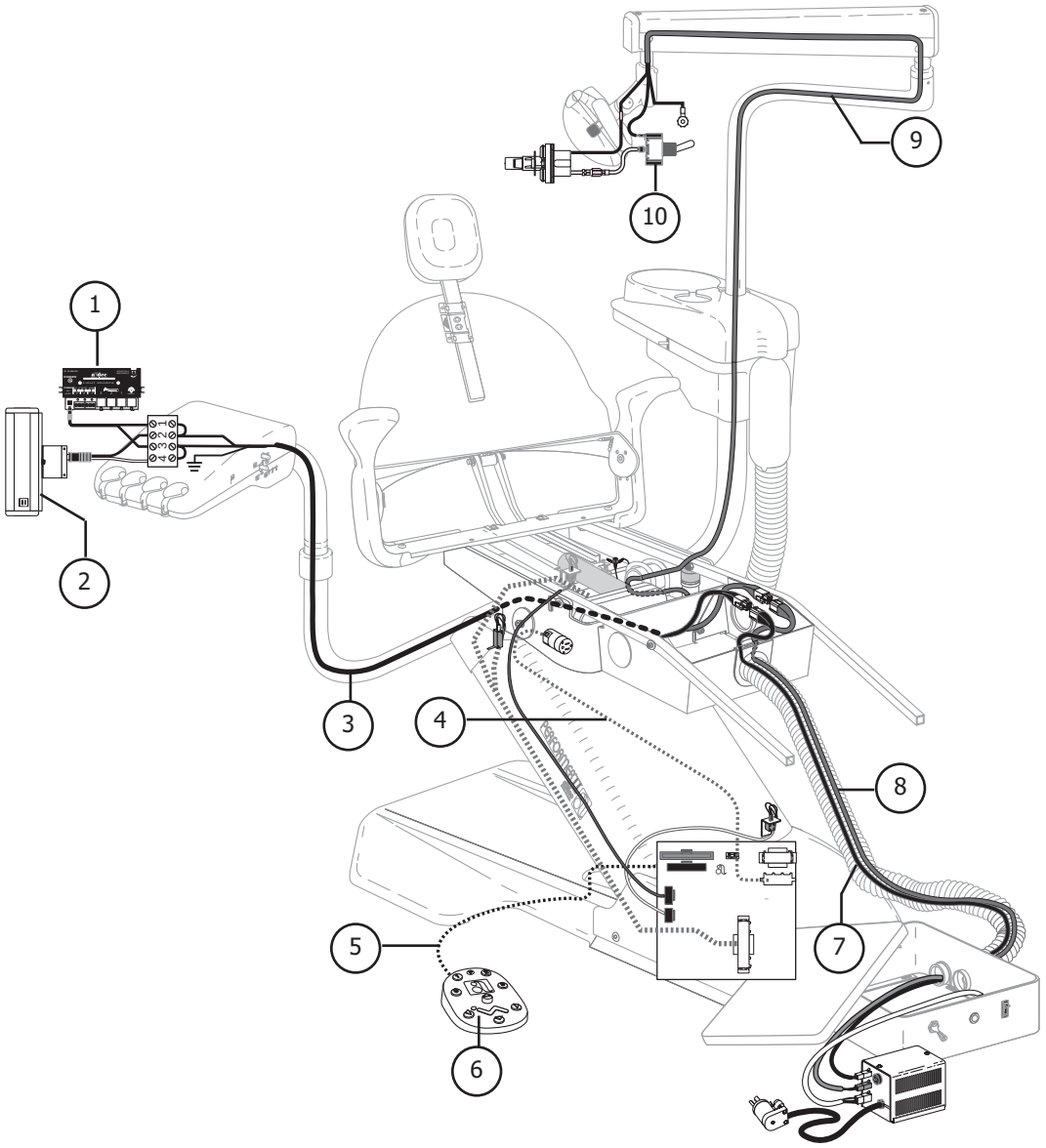



**WARNING**

High voltages are present at motor and limit switch connections. Unplug the chair before servicing. Failure to do so could result in serious injury.

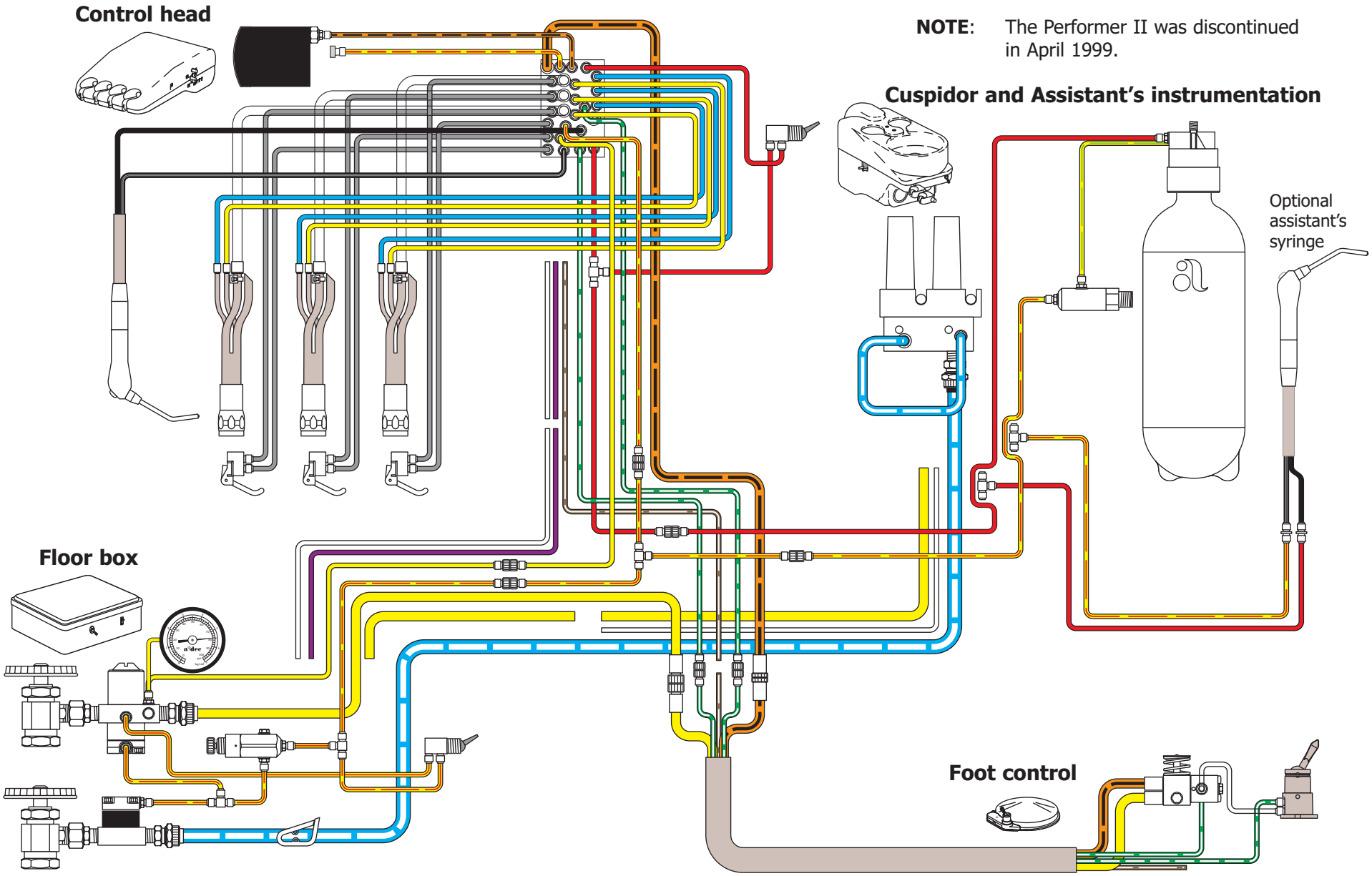
## Performer II Electronics

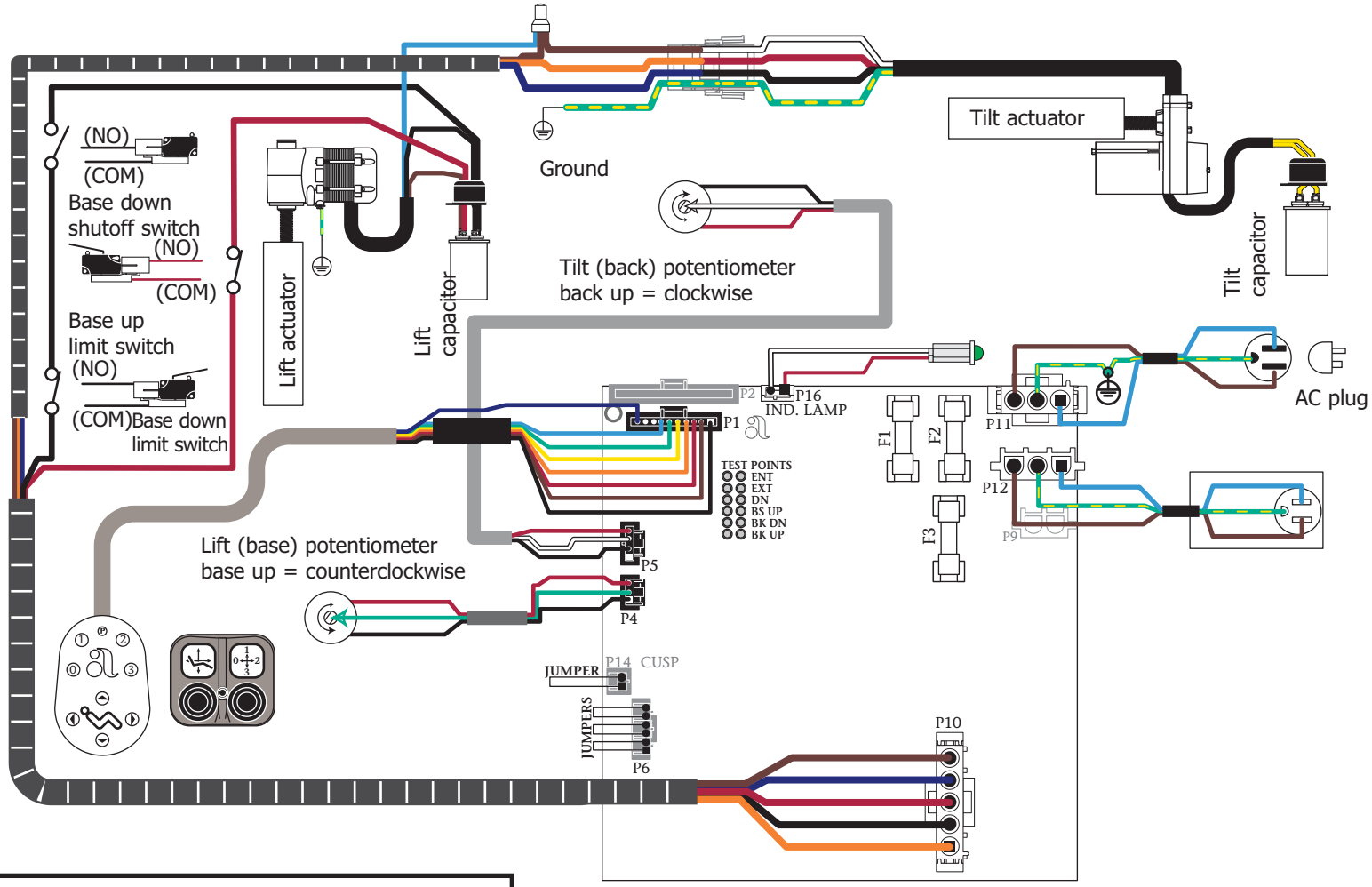
| Item # | Part Number | Description |
|---|---|---|
| 1 | 76.1005.00 | Intra-oral light source kit |
| 2 | 76.8000.00 | Bitewing x-ray viewer |
| 3 | 35.1673.00 | Cable assembly, control head |
| 3 | 28.1264.00 | Power cord, 115V |
| 4 | 28.1276.00 | Power cord, 230V |
| 5 | 61.2108.00 | Cable assembly, footswitch |
| 6 | 61.3043.00 | Button footswitch |
| 7 | 35.1567.00 | Cable assembly, accessory power |
| 8 | 28.1244.00 | Cable assembly, dental light lower |
| 9 | 90.1054.00 | Cable assembly, dental light upper |
| 10 | 90.1039.00 | On/Off switch |




**NOTE**: Performer II chair discontinued in April 1999.

# Performer II Flow Diagram






**WARNING**

High voltages are present at motor and limit switch connections. Unplug the chair before servicing. Failure to do so could result in serious injury.

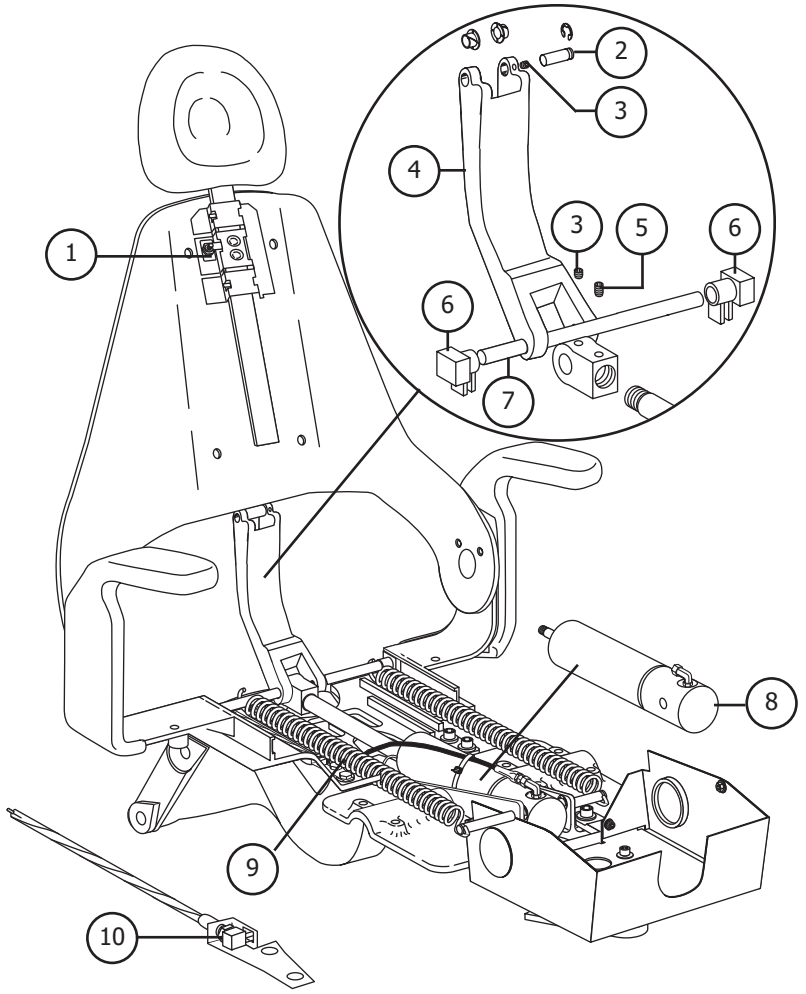
## Troubleshooting Performer II Chair

Tips and troubleshooting information are listed to assist in distinguishing Performer II chair problems.

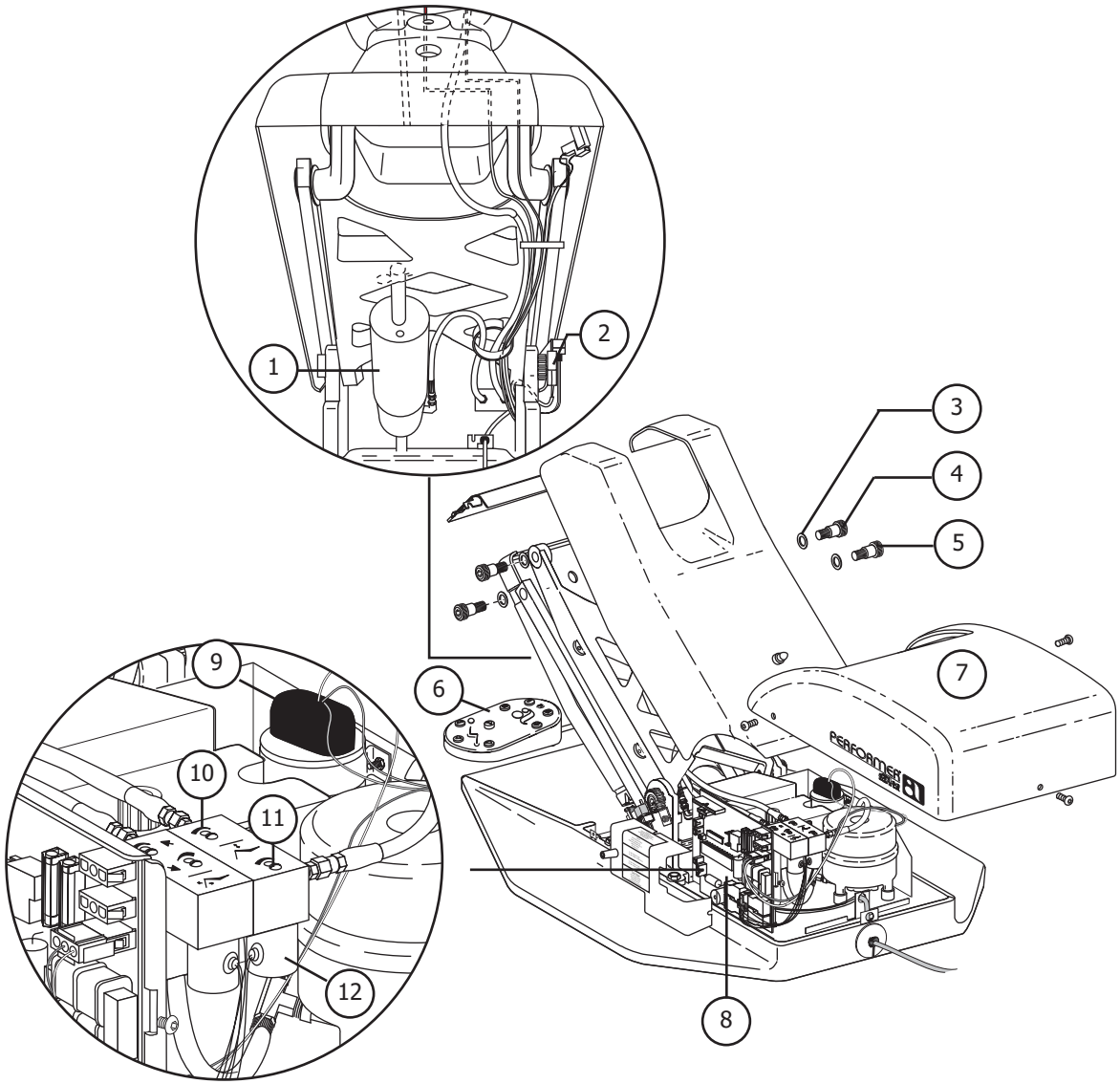
| Problem | Action |
|---|---|
| Chair back or base is inoperative | Follow these steps.<br>**Task** **Description**<br>1 Make sure system power is ON.<br>2 Check power and connections.<br>3 Check for bad fuses on the circuit board.<br>4 Operate chair from printed circuit board test points.<br>5 Check for bad capacitors. |
| Noisy motor | Follow these steps.<br>1 Check for loose mounts.<br>2 Adjust base screw drive nut.<br>3 Replace motor. |
| Automatic positions erratic | • Check potentiometers and wiring<br>• Replace the circuit board |

## Performer III Upper Structure

| Item # | Part Number | Description |
|---|---|---|
| 1 | 006.122.01 | Retainer nut |
| 2 | 61.2740.00 | Pin |
| 3 | 007.069.00 | Setscrew |
| 4 | 61.2741.01 | Back link |
| 5 | 007.042.00 | Setscrew |
| 6 | 61.2082.00 | Slide |
| 7 | 61.2693.00 | Tilt rod |
| 8 | 61.2050.01 | Tilt cylinder |
| 9 | 013.054.00 | Spring |
| 10 | 041.372.00 | Potentiometer |



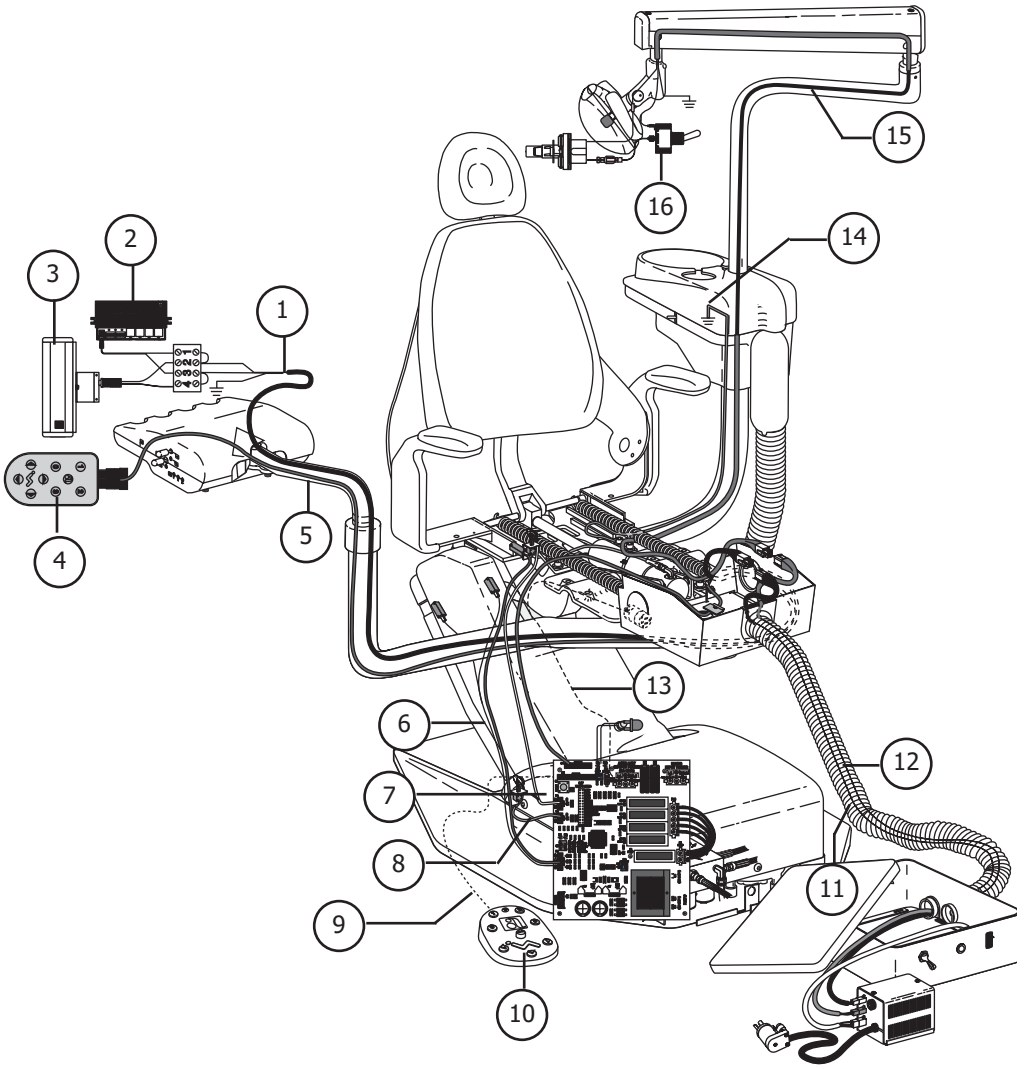
## Performer III Lower Structure

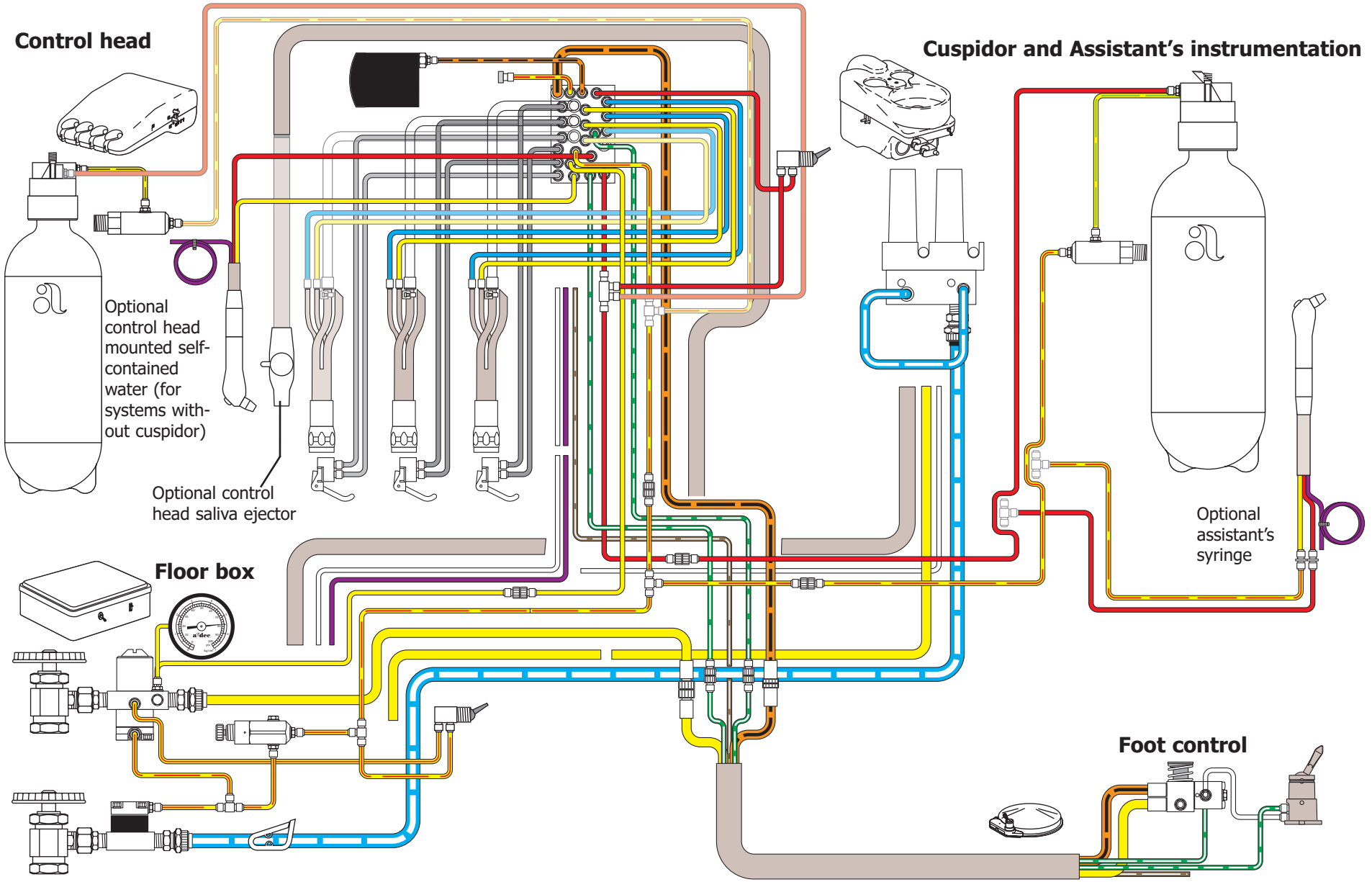



| Item # | Part Number | Description |
|---|---|---|
| 1 | 61.1287.00 | Lift cylinder |
| 2 | 044.184.01 | Base up limit switch |
| 3 | 004.148.00 | Flat washer |
| 4 | 001.165.00 | Socket shoulder screw |
| 5 | 001.164.00 | Socket shoulder screw |
| 6 | 61.3043.00 | Button foot switch |
| 7 | 61.2142.00 | Pump cover |
| 8 | 90.1029.00 | PCB, 120V |
| | 90.1029.01 | PCB, 240V |
| 9 | 90.1032.00 | Capacitor (after 6/1/98) |
| | 90.1033.00 | Capacitor (before 6/1/98) |
| | 90.1034.00 | Base capacitor |
| 10 | 61.0460.00 | Flow adjustment screw |
| 11 | 001.002.01 | Truss head screw |
| | 002.118.02 | Button head screw |
| 12 | 61.1335.00 | Solenoid, 100V, Yellow wires |
| | 61.1336.00 | Solenoid, 120V, Black wires |
| | 61.1337.00 | Solenoid, 240V, Red wires |

## Performer III Electronics

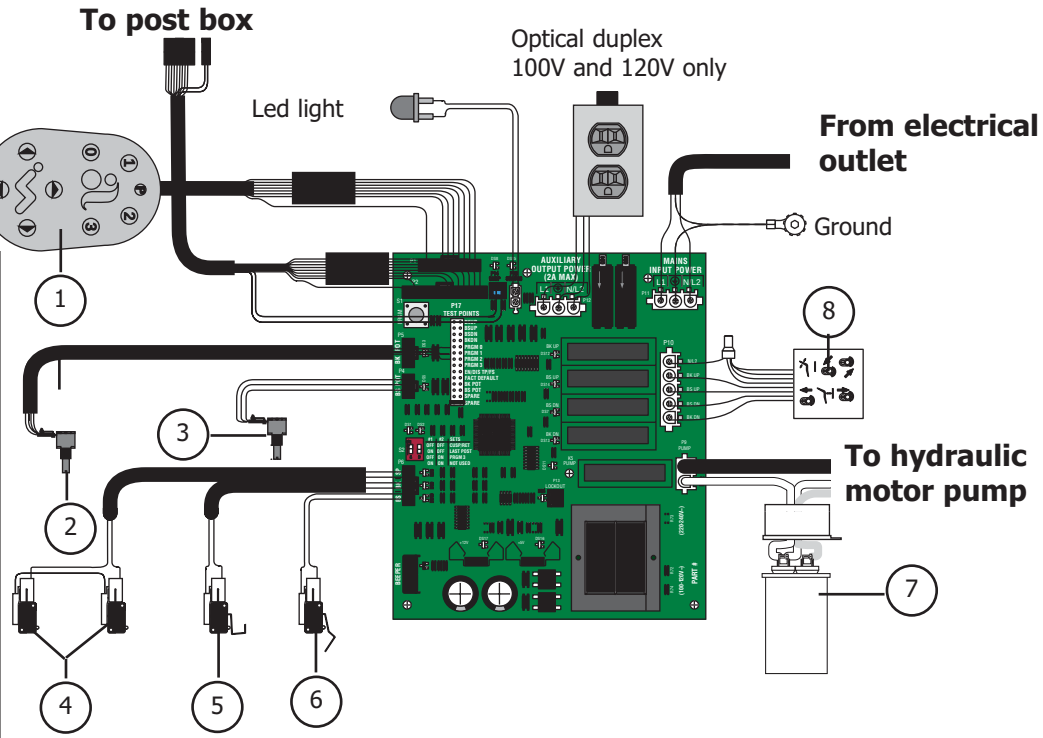
| Item # | Part Number | Description |
|---|---|---|
| 1 | 35.1673.00 | Cable assembly, control head |
| 2 | 76.1005.00 | Single volt intra-oral light source |
| 3 | 76.8100.00 | Bitewing viewer |
| 4 | 39.1385.00 | Touchpad |
| 5 | 76.0144.00 | Cable assembly, touchpad |
| 6 | 61.2099.00 | Limit switch, back up |
| 7 | 61.1503.00 | Back electric wiring cable |
| 8 | 61.1502.00 | Base electric wiring cable |
| 9 | 61.2108.00 | Cable assembly, foot switch |
| 10 | 61.3043.00 | Button footswitch |
| 11 | 35.1567.00 | Cable assembly, accessory power |
| 12 | 28.1244.00 | Cable assembly, dental light, lower |
| 13 | 28.1264.00 | Power cord, 115V |
| 13 | 28.1276.00 | Power cord, 230V |
| 14 | 41.1444.00 | Ground wire assembly |
| 15 | 90.1054.00 | Cable assembly, dental light, upper |
| 16 | 90.1039.00 | On/Off switch, dental light |




Control head
Optional control head mounted self-contained water (for systems without cuspidor)
Optional control head saliva ejector
Cuspidor and Assistant's instrumentation
Optional assistant's syringe
Floor box
Foot control

## Performer III (LEDs)

| Item # | Part Number | Description |
|---|---|---|
| 1 | 61.3043.00 | 8-function footswitch |
| 2 | 041.372.00 | Positioning potentiometer, back |
| 3 | 041.372.00 | Positioning potentiometer, base |
| 3 | 28.1264.00 | Power cord, 115V |
| 4 | — | Safety stop limit switch |
| 5 | 61.2065.00 | Back up limit switch (1040 only) |
| 6 | 044.184.01 | Base up limit switch (1040 only) |
| 7 | 90.1031.00<br>90.1034.00 | Capacitor with boot (100-120V)<br>Capacitor with boot (240V) |
| 8 | 61.1332.00<br>61.1333.00<br>61.1334.00 | Manifold assembly, hyd, 100V<br>Manifold assembly, hyd, 120V<br>Manifold assembly, hyd, 240V |

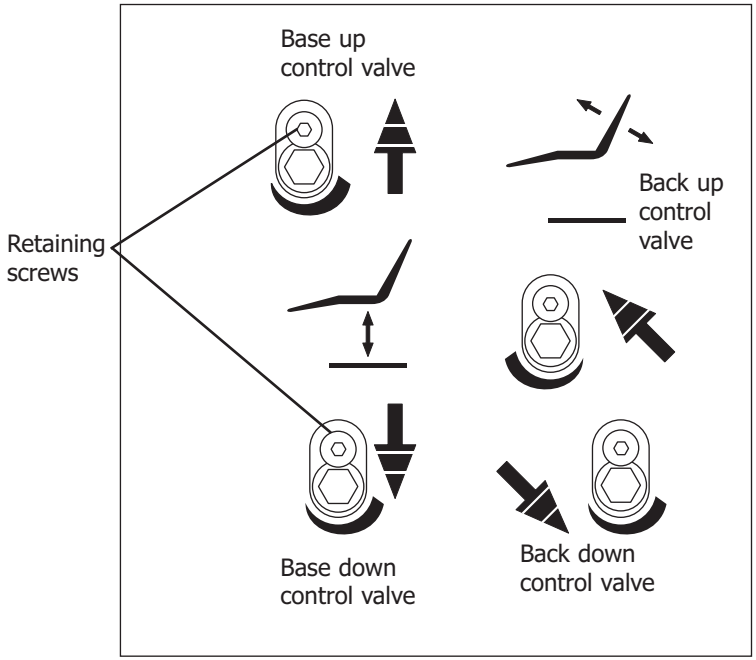


## Adjusting the Hydraulic Manifold

The hydraulic manifold incorporates four speed control valves which restrict or divert the flow of hydraulic fluid to and from the lift and tilt cylinders.

**NOTE**: The speed control valves are hex drive.

| To adjust... | Do this... |
|---|---|
| Base up speed | Turn base up control valve:<br>clockwise to decrease speed, or<br>counterclockwise to increase speed. |
| Base down speed | Turn base down control valve:<br>clockwise to decrease speed,<br>or counterclockwise to increase speed |
| Back up speed | Turn back up control valve counterclockwise to decrease speed, or clockwise to increase speed. Back down speed. Turn the back down control valve, clockwise to decrease speed, or counterclockwise to increase speed.<br><br>**NOTE**: This is opposite of the other three control valves. Turning the back up valve counterclockwise too far may disable this function. |




**CAUTION**

Do not remove retaining screw from the manifold. Do not completely close a speed control valve. The motor/pump could overheat and become damaged from pumping against a closed valve.

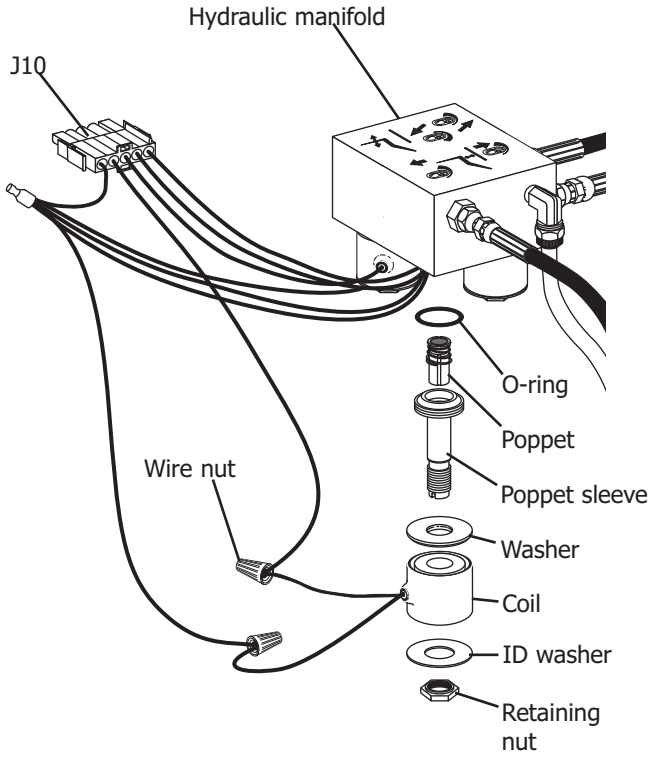
## Installing a Solenoid

The following steps will guide you through the procedure for installing a solenoid.

### Removing a Solenoid

To remove a solenoid:

1. Lower the chair base and back to the full down position to depressurize the hydraulic system. Remove the motor pump cover, then unplug the chair.
2. If necessary, remove the two mounting screws that secure the manifold to the hydraulic tray. Rotate that manifold so the solenoids are accessible.
3. Using a flat blade screwdriver and a 9/16" wrench, remove the defective solenoid.
4. Cut the defective solenoid wires 3" (74mm) from the coil and discard.
5. Remove the old o-ring from the solenoid cavity and clean out any excess oil. Replace the o-ring with the correct o-ring provided in the kit.




**WARNING**

The solenoid coils are powered by line voltage (100, 120, or 240V AC). Failure to unplug the chair may result in serious injury from electrical shock.

## Replacing a Solenoid

To replace a solenoid:

1 Install the new solenoid stem and poppet into the manifold and tighten to 35-40 in lb (.11985–.2284 Nm). Position the remaining solenoid parts on the stem and secure by tightening the retaining nut to 25-30 in lb (.14275–.1713 Nm).

2 Cut the solenoid wires 3" (75 mm) from the coil. Install the stripped wires from the solenoid and the connector housing into a wire nut. Repeat for the remaining wire.

3 Using the mounting screws, secure the manifold to the hydraulic tray.

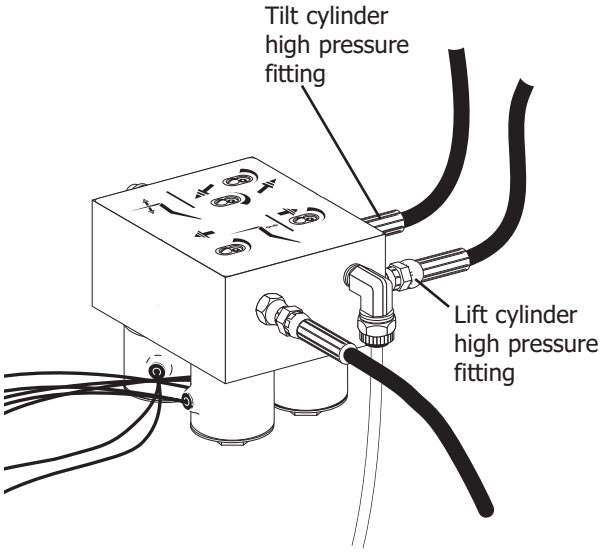
4. Plug in the chair. Test the chair functions to ensure proper operation and that no fluid leakage occurs. Reinstall the motor pump cover.

## Correcting Hydrostatic Lock

Hydraulic lock occurs based on the following conditions:

- chair base or back is stuck in full up position
- limit switch not activated, or
- down solenoid poppet is unable to open based on excess hydraulic pressure.

| Task | Description |
|---|---|
| 1 | Remove the motor/pump cover from the chair. |
| 2 | Fit a 5/8" wrench to the high pressure outlet port (either lift or tilt, whichever is in hydrostatic lock) of the hydraulic manifold. Hold the port still and use a 9/16" wrench to loosen the hose fitting. |
| 3 | Place a shop rag around the fitting to absorb the fluid. |
| 4 | Carefully loosen the fitting counterclockwise until oil begins to leak from the fitting. Retighten the fitting. Operate the down function. A second release of hydraulic fluid may be required. |
| 5 | Adjust the limit switch that caused the hydrostatic lock (refer to *Adjusting the Base Up Limit Switch*). In some cases it may be necessary to remove and replace the limit switch. Adjust the new limit switch as needed. Also ensure that the large gear/actuator is securely installed and not slipping. |
| 6 | Cycle the chair a couple of times to verify it is no longer in hydrostatic lock. |

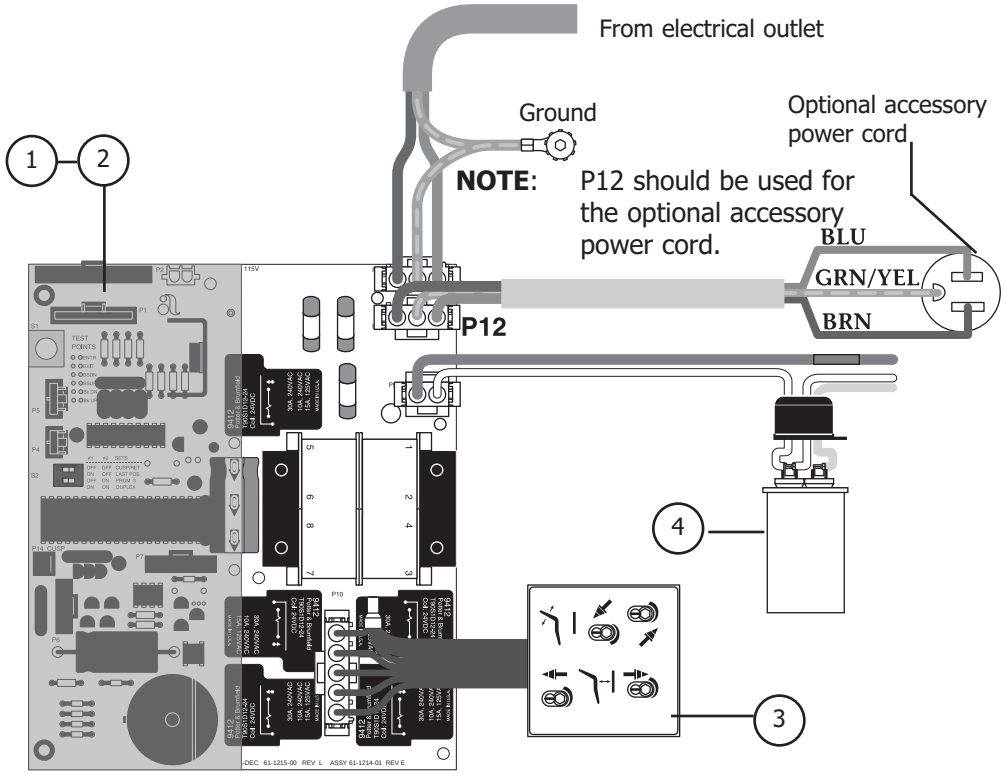



**Correcting Hydrostatic Lock**

## Performer III (No LEDs)

| Item # | Part Number | Description |
|---|---|---|
| 1 | 61.2512.00 | Printed circuit board, 240V |
| 2 | 61.2510.00 | Printed circuit board, 100-120V |
| 3 | 61.1333.00 | Hydraulic manifold, 120V |
| 3 | 61.1334.00 | Hydraulic manifold, 240V |
| 4 | 90.1031.00 | Capacitor |

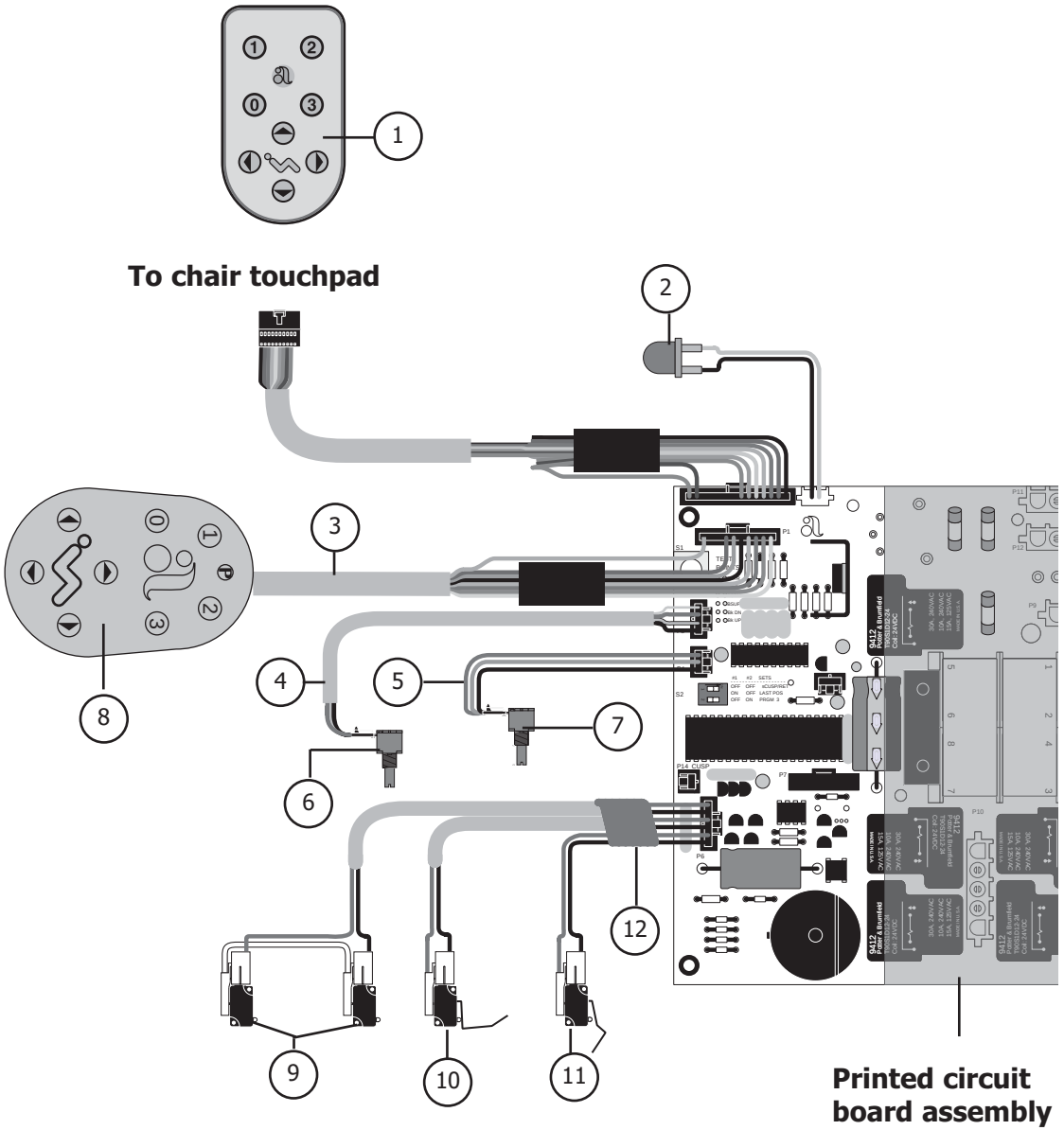
| To Replace Circuit Board<br>Part Number | Order this kit |
|---|---|
| 61.2510.00<br>61.1214.01<br>61.1373.01 | 90.1029.00 (100-120V) |
| 61.2512.00<br>61.1217.01 | 90.1029.01(220-240V) |



# Performer III Electrical Diagram

## Performer III (No LEDs)

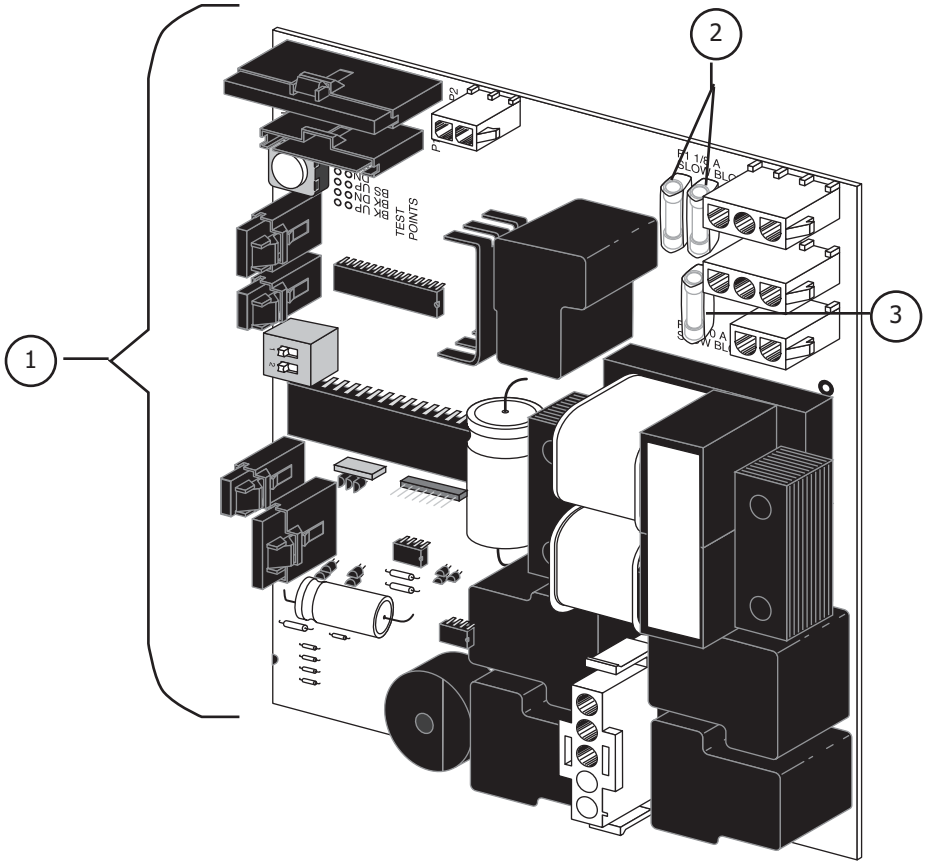
| Item # | Part Number | Description |
|---|---|---|
| 1 | 39.1385.00 | Chair touchpad kit |
| 2 | 041.582.00 | LED light |
| 3 | 61.2108.00 | Cable assembly, button footswitch |
| 4 | 61.1503.00 | Cable assembly, potentiometer, back up |
| 5 | 61.1502.00 | Cable Assembly, potentiometer, base up |
| 6 | 041.372.00 | Potentiometer, back |
| 7 | 041.372.00 | Potentiometer, base |
| 8 | 61.3043.00 | Button footswitch |
| 8 | 61.3048.00 | Button footswitch, membrane |
| 8 | 61.3049.00 | Button footswitch, boot |
| 9 | | Limit switch, safety |
| 10 | 044.184.00 | Limit switch, back up |
| 11 | 044.184.01 | Limit switch, base up |
| 12 | 61.2099.00 | Cable assembly, limit switch |



## Performer III (No LEDs)

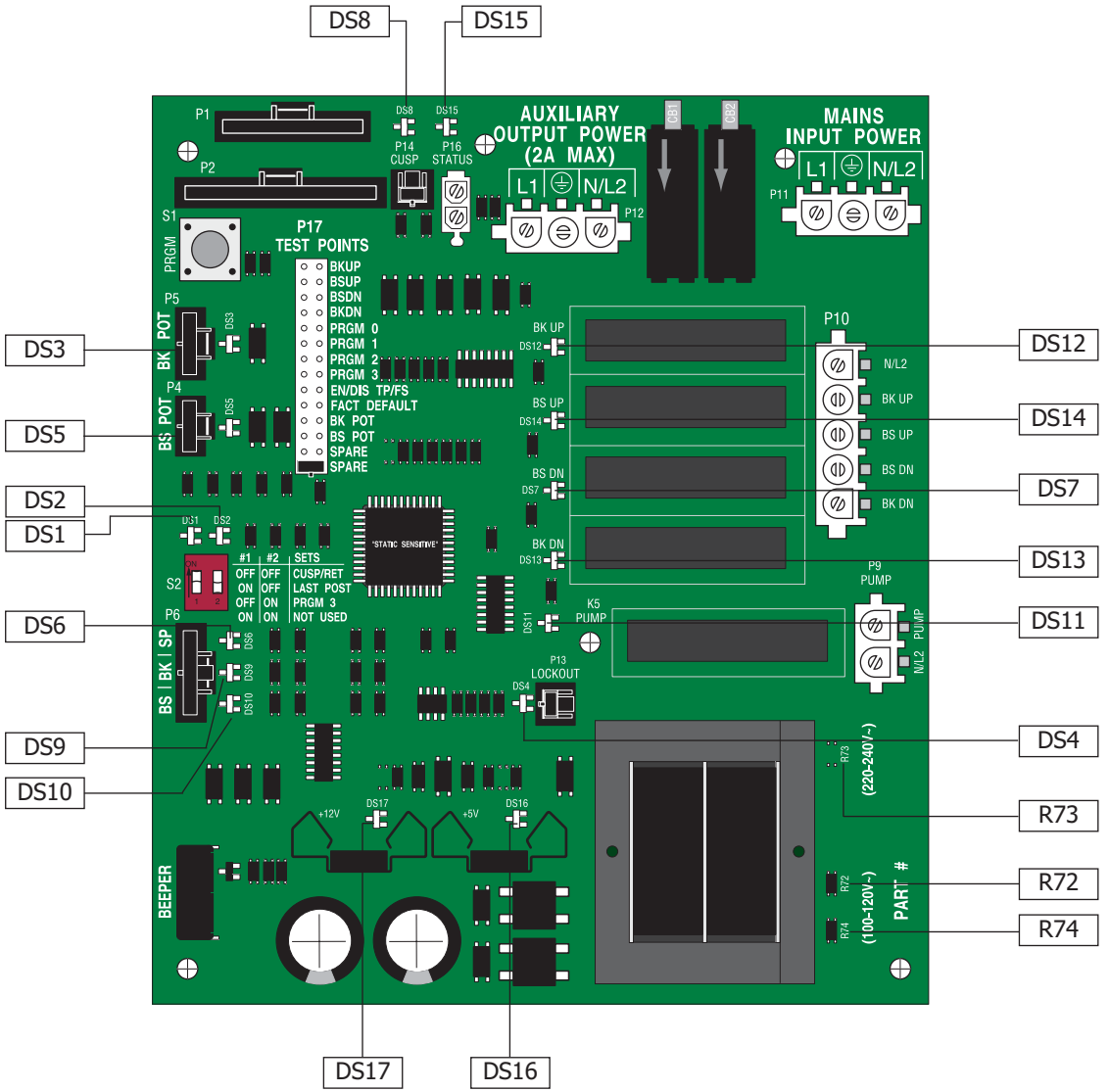
| Item # | Part Number | Description |
|---|---|---|
| 1 | 90.1029.00 | Circuit board assembly, 100V-120V |
| | 90.1029.01 | Circuit board assembly, 240V |
| 2 | 044.192.00 | Fuse, 10 A, 5x20 mm time lag, 240V (61.2510.00 CBA, 120V) |
| | 044.147.00 | Fuse, 6.3 A (61.2512.00 CBA, 240V) |
| 3 | 044.193.00 | Fuse, .063 A, 5x20MM, time lag, 250V (61.2510.00 CBA, 120V) |
| | 044.194.00 | Fuse, .040A (61.2512.00 CBA, 240V) |

**NOTE**: Refer to the *Genuine A-dec Service Parts Catalog* for information on fuses that worked on previous styles of printed circuit boards. There are no replacement fuses on the following circuit boards: 61.2774.00 (100-120V) and 61.2774.01 (220-240V).



## LEDs

**NOTE:** Refer to *Testing Factory Defaults* for more details.



| LED | Description | Information Communicated |
|---|---|---|
| DS1<br>DS2 | S2 (red DIP switch) is ON | Switch is ON |
| DS3 | Back Potentiometer LED ON | Back potentiometer is functioning normally when the chair back is moving |
| DS4 | Handpiece Lockout LED ON | Lockout enabled |
| DS5 | Base Potentiometer LED ON | Base potentiometer is functioning normally when the chair base is moving |
| DS6 | Chair Stop Plate Limit Switch LED ON | Chair stop plate limit switch activated |
| DS7<br>DS11<br>DS12<br>DS13<br>DS14 | Base Down LED<br>Pump LED<br>Back Up LED<br>Back Down LED<br>Base Up LED | Relay is ON when LED is ON and the function is moving |
| DS8 | Cuspidor Limit Switch LED ON | Cuspidor limit switch activated, or jumper is missing |
| DS9 | Back Up Limit Switch LED ON | Back Up limit switch activated |
| DS10 | Base Up Limit Switch LED ON | Base Up limit switch activated |
| DS15 | Status LED ON | ON: Normal operation<br>Off: Microcontroller is not functioning. Verify voltage regulator LEDs (DS16 and DS17) are ON. Is the chair plugged in? Circuit breaker tripped?<br>Slow Blink: Check cuspidor (DS8) and stop plate (DS6) limit switch LEDs<br>Fast Blink: Check handpiece lockout (DS4) LED<br>Double Blink: A SPARE jumper is in the FACT DEFAULT position |
| DS16 | 5V Regulator LED OFF | 1 Power to circuit board is OFF, or<br>2 There is a short in the cable to the base or back potentiometer. Disconnect all cables except the power cable. Plug the cables in one at a time (the LED will turn ON when the problem is fixed). |
| DS17 | 12V Regulator LED OFF 1 | 1 Power to circuit board is OFF, or<br>2. There is a short in the cable to the status light or limit switch (the LED will turn ON when the problem is fixed). |

## Testing and Programming the Circuit Board

Follow these steps to test and program the chair circuit board.

**Task** **Description**

1 Insert the SPARE jumper into the FACT DEFAULT location (on P17).

Result: The chair will cycle the base and back movements and automatically reprogram the memory positions to the factory settings (position 0 to entry/exit; 1 and 2 to the same pre-programmed positions; and 3 to cuspidor/return).

If the circuit board beeps three times, continue with step two.
If the circuit board beeps just once, the chair cycle has been interrupted. Diagnose and correct any errors, then press either circuit breaker for five seconds to restart the cycle (refer to *Testing Factory Defaults*).

2 Move the jumper from the FACT DEFAULT location (on P17) back to the SPARE location.

**NOTE:** The jumper must be in the SPARE position for normal chair functions and safe operation.

3 Press "1" on the touchpad or footswitch or green position on the 8-function footswitch.

Result: The chair will move to the operating position.

4 Press "0" on the touchpad or footswitch, or the red button on the 8-function footswitch.

Result: The chair will move to the entry/exit position.

**NOTE:** The chair programmable position buttons can be reprogrammed to the desired positions as specified by the dental team.

**WARNING**

The chair will begin to move automatically during this test; to avoid injury or equipment damage, remove all possible obstructions and maintain a safe distance from the chair. To interrupt the chair cycle, press any button on the touchpad or footswitch, or activate the chair stop plate.

## Testing Factory Defaults

The table lists conditions and corrective actions for testing the factory defaults for LEDs.

| Problem | Action |
|---|---|
| Factory Default test will not start (LEDs DS15, DS16 and DS17 are Off) | |

| If . . . | Then . . . |
|---|---|
| Transformer thermal limiter is open | Wait for transformer to cool off. |
| Circuit breaker is tripped | Reset circuit breaker (short circuit fault currents may damage the circuit breaker and prevent it from resetting). |

| Problem | Action |
|---|---|
| Factory Default test will not start (LED DS15 is Off; DS16 and DS17 are ON) | |

| If . . . | Then . . . |
|---|---|
| Input voltage is too low or is outside the required range | Verify input voltage and voltage selection resistors (100-120VAC=R72 and R74) (220-240VAC=R73). |
| Microcontroller is not functioning | Replace the circuit board. |

| Problem | Action |
|---|---|
| Factory Default test will not start (LED DS15 is blinking; DS16 and DS17 are ON) | |

| If . . . | Then . . . |
|---|---|
| Input voltage is too low or is outside the required range | Verify input voltage and voltage selection resistors (100-120VAC=R72 and R74) (220-240VAC=R73). |
| Microcontroller is not functioning | Replace the circuit board. |

**Problem** | **Action**

Factory Default test halts during the BASE UP test and the PCB board beeps one time

| If . . . | Then . . . |
|---|---|
| Input voltage is too low or is outside the required range | Verify input voltage and voltage selection resistors (100-120VAC=R72 and R74 (220-240VAC=R73). |
| Base Up limit switch is activated | Verify switch operation. |
| Motor thermal limiter is open, motor is hot | Wait for motor to cool off. |
| Motor capacitor is defective | Test capacitor and replace, if needed. |
| Base Up solenoid is defective | Test solenoid and replace, if needed |
| Base is in hydrostatic lock | Refer to *Correcting Hydrostatic Lock.* |
| Potentiometer is not changing voltage | Verify potentiometer LED comes ON when base is moving.<br>Check potentiometer mechanical drive and electrical connections. |

Factory Default test halts during the BACK DOWN test and PCB board beeps one time

| If . . . | Then . . . |
|---|---|
| Stop plate limit switch is activated | Verify switch operation. |
| Stop plate is jammed | Remove and reinstall the stop plate. |
| Back Down solenoid is defective | Test solenoid and replace, if needed |
| Back is in hydrostatic lock | Refer to *Correcting Hydrostatic Lock.* |
| Potentiometer is not changing voltage | Verify potentiometer LED is ON when back is moving.<br>Check potentiometer mechanical drive and electrical connections. |

| Problem | Action |
|---|---|

Factory Default test halts during the BACK UP test

| If . . . | Then . . . |
|---|---|
| Back up limit switch is activated | Verify switch operation. |
| Back Up solenoid is defective | Test solenoid and replace, if needed. |
| Back is in hydrostatic lock | Refer to the *Correcting Hydraulic Lock*. |
| Potentiometer is not changing voltage | Verify potentiometer LED is ON when back is moving.<br>Check potentiometer mechanical drive and electrical connections. |

Factory Default test halts during the BASE DOWN test

| If . . . | Then . . . |
|---|---|
| Stop plate limit switch is activated | Verify switch operation. |
| Base Down solenoid is defective | Test solenoid and replace, if needed. |
| Base is in hydrostatic lock | Refer to *Correcting Hydraulic Lock*. |
| Potentiometer is not changing voltage | Verify potentiometer LED is ON when base is moving.<br>Check potentiometer mechanical drive and electrical connections. |

Chair moves by itself when power is turned ON

| If . . . | Then . . . |
|---|---|
| The jumper is in FACT DEFAULT position | Verify that the jumper is in the SPARE position. |
| Short circuit in touchpad or footswitch | Unplug the touchpad and footswitch; reset the circuit breaker. If the problem isn't repeated, the touchpad or footswitch may have shorted. |
| Short circuit on circuit board | Replace the circuit board. |

## Identifying New Features

The chart provides information on new features and associated programming on the PCB.

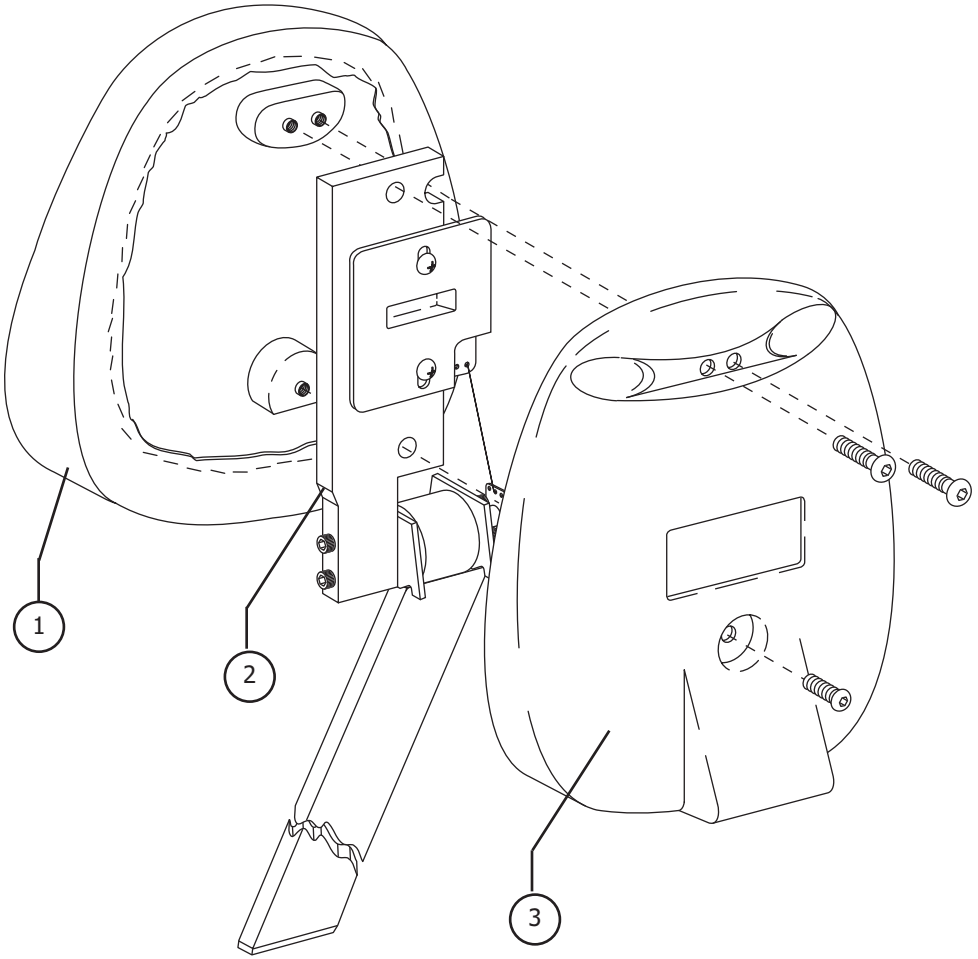
| Feature | Programming |
|---|---|
| Raise the chair with the stop plate limit switch | Plug the chair into an electrical outlet.<br><br>Tap the chair stop plate three times within five seconds and hold on the third tap.<br><br>Result: The chair base will continue to rise as long as the stop plate is held in. This function is automatically disabled after five minutes but is re-enabled upon each power up. To reset the five-minute timer, depress either circuit breaker until the LEDs turn OFF, then release the circuit breaker. |
| Enable and disable touchpad and footswitch buttons | Place the SPARE jumper in the EN/DIS TP/FS position of the Test Points header P17.<br><br>Push the buttons to be Enabled or Disabled (PRGM, PRGM 0, PRGM 1, PRGM 2, PRGM 3).<br><br>Result: One beep indicates the button is disabled. Three beeps indicate the button in enabled.<br><br>Place the SPARE jumper back into the SPARE position of the Test Points header P17. |
| Handpiece lockout | Plumb a normally open air-electric switch (kit P/N 61.1384.00) to the air-coolant tubing (green with long white dashes).<br><br>Insert the two position connector from the air-electric switch into P13 Lockout (next to the transformer). |

| Feature | Programming |
|---|---|
| Diagnostic LEDs | See *Performer III Diagnostic LEDs for the Circuit Board*. |
| Test Points Header | Use a SPARE jumper to test the chair manual functions (BKUP, BSUP, BSDN, BKDN).<br><br>BK POT and BS POT points allow test meter check of potentiometer voltages and measurement of the analog DC voltage from pin 2 of the potentiometer. |

## Single-Articulating Headrest
(Discontinued)

| Item # | Part Number | Description |
|---|---|---|
| 1 | 61.2355.XX | Formed headrest upholstery assy |
| 2 | | Not a serviceable part |
| 3 | 61.2350.00 | Headrest cover |

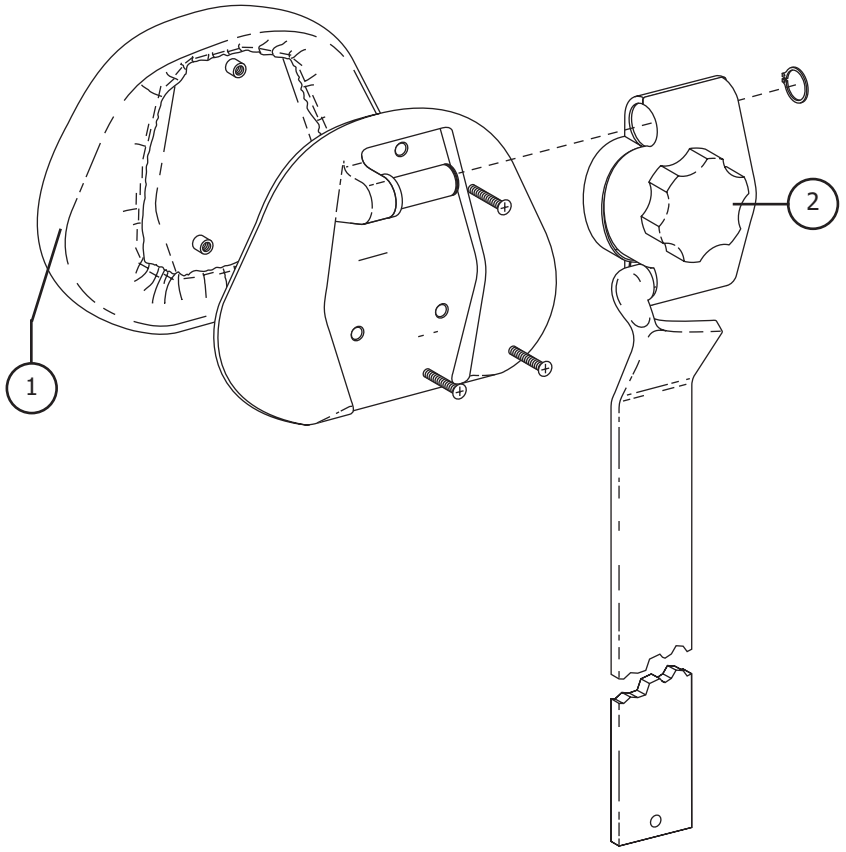
**NOTE**: For upholstery color availability, refer to the current *A-dec Standard Upholstery Guide*.



## Double-Articulating Headrest

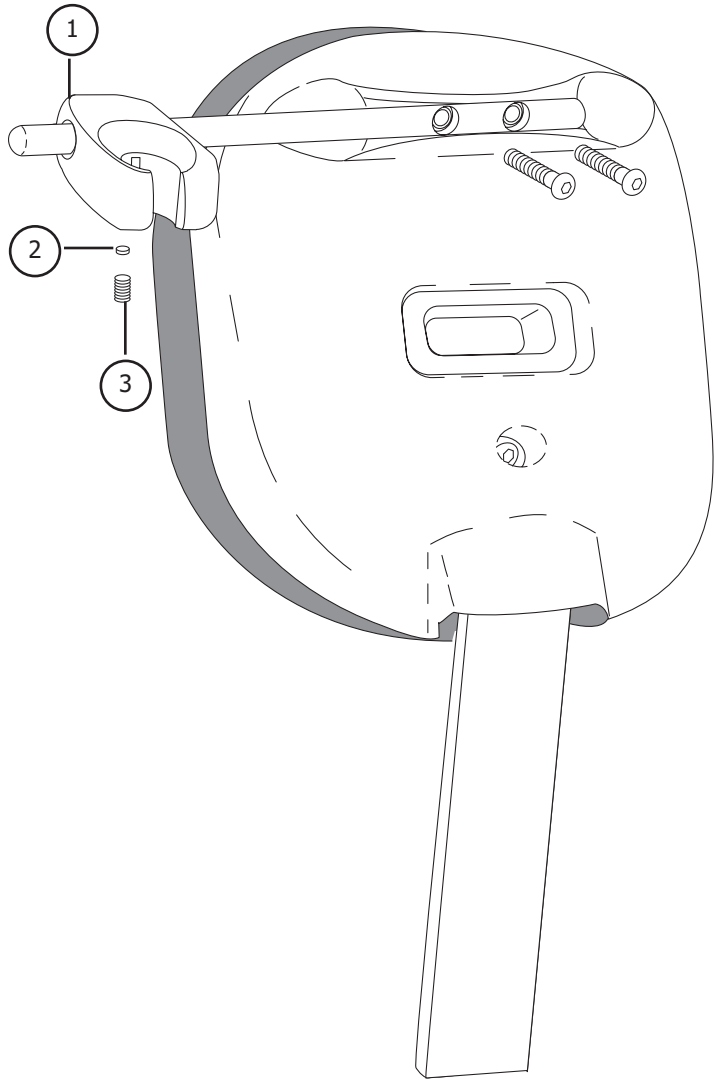
| Item # | Part Number | Description |
|---|---|---|
| 1 | 61.2116.XX | Formed headrest upholstery assy |
| 2 | 027.035.01 | Height adjustment knob, Gray |
| | 027.035.00 | Height adjustment knob, Black |

**NOTE**: For upholstery color availability, refer to the current *A-dec Standard Upholstery Guide*.



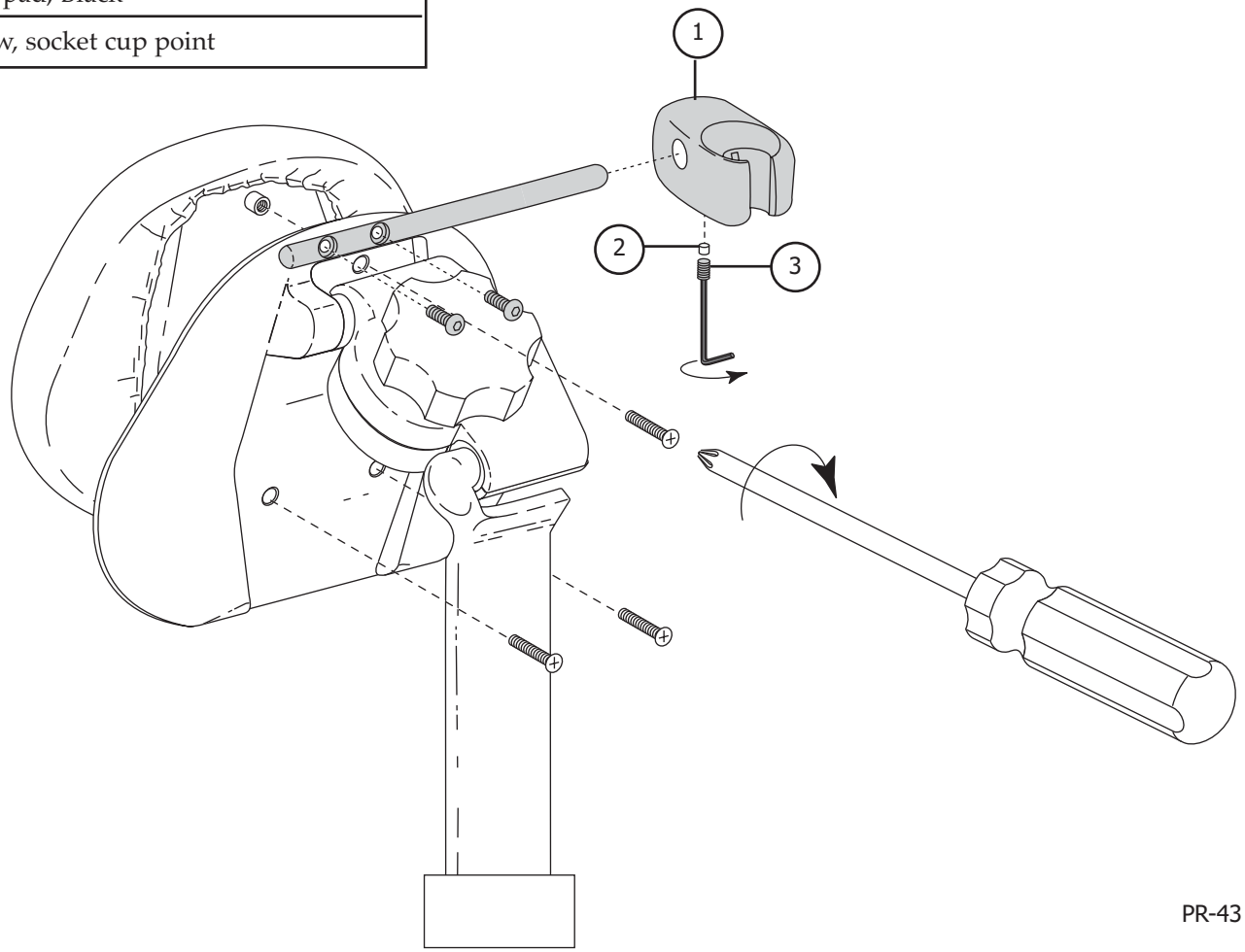
## Headrest Instrument Holder
(For single-articulating headrest)

| Item # | Part Number | Description |
|---|---|---|
| 1 | 99.0584.00 | Cascade individual assistant's holder (includes friction pad and setscrew) |
| 2 | 45.0403.00 | Friction pad, Black |
| 3 | 007.042.00 | Set screw, socket cup point |



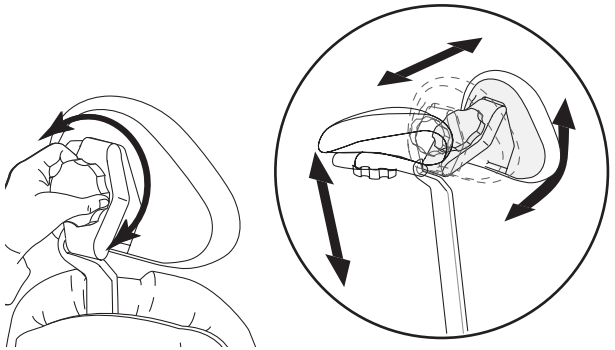
## Headrest Instrument Holder Kit
## (For double-articulating headrest)

| Item # | Part Number | Description |
|---|---|---|
| 1 | 99.0584.00 | Cascade individual assistant's holder (includes friction pad and setscrew) |
| 2 | 45.0403.00 | Friction pad, Black |
| 3 | 007.042.00 | Set screw, socket cup point |



## Using the Headrest

The double articulating headrest offers complete versatility in head positioning. This headrest allows the doctor/assistant to position the headrest to fit the nape of the patient's neck, and to tilt to the head to almost any position.

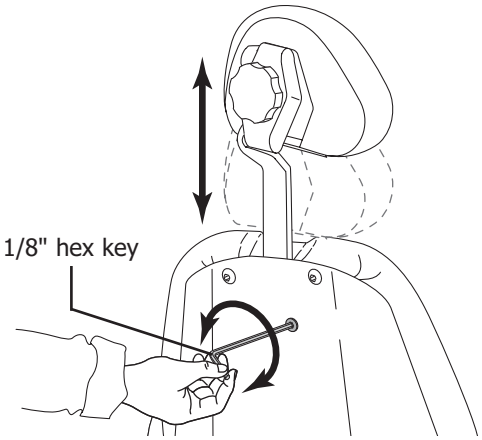


### Adjusting Headrest Position

Loosen the knob on the back of the headrest. Move the headrest into the desired position. Tighten the headrest knob.

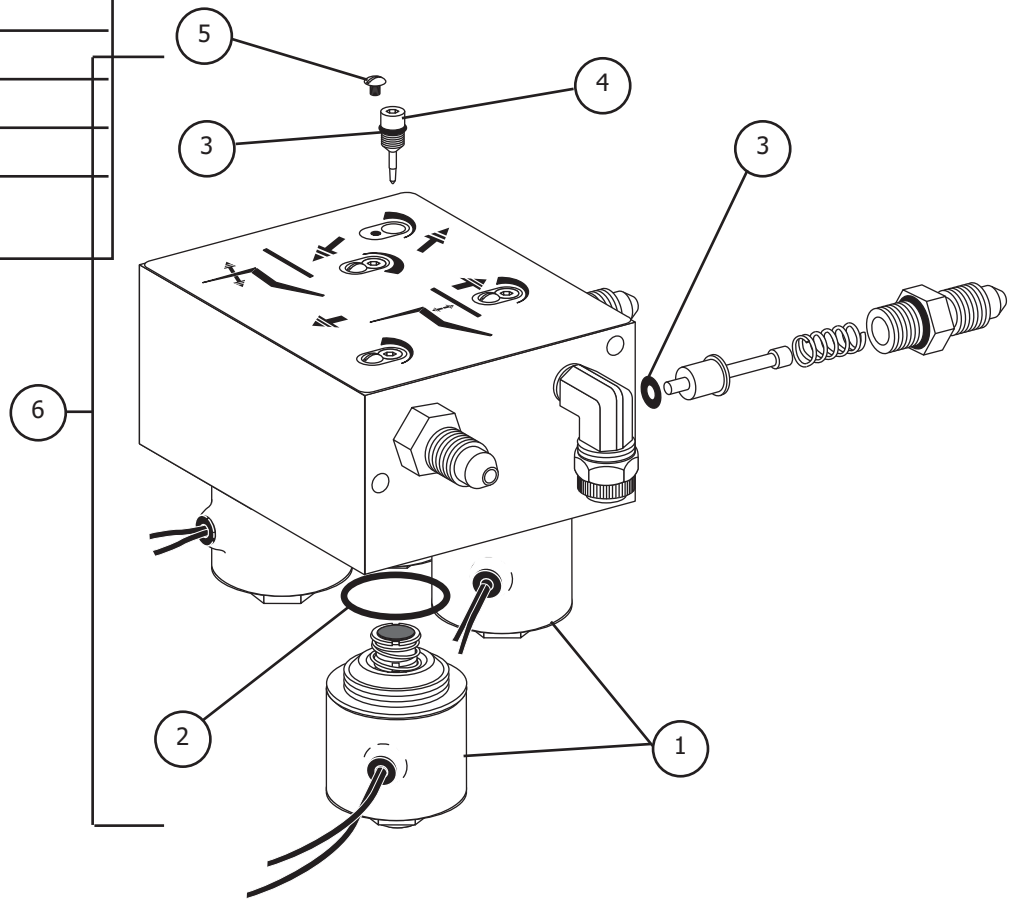
### Adjusting Headrest Glide Bar Tension

The headrest should move freely while positioning yet maintain its position when set. Turn the tension adjustment screw clockwise to increase friction and hold the headrest more securely. Turn the tension adjustment screw counterclockwise to decrease friction and allow the headrest to move up and down more freely.

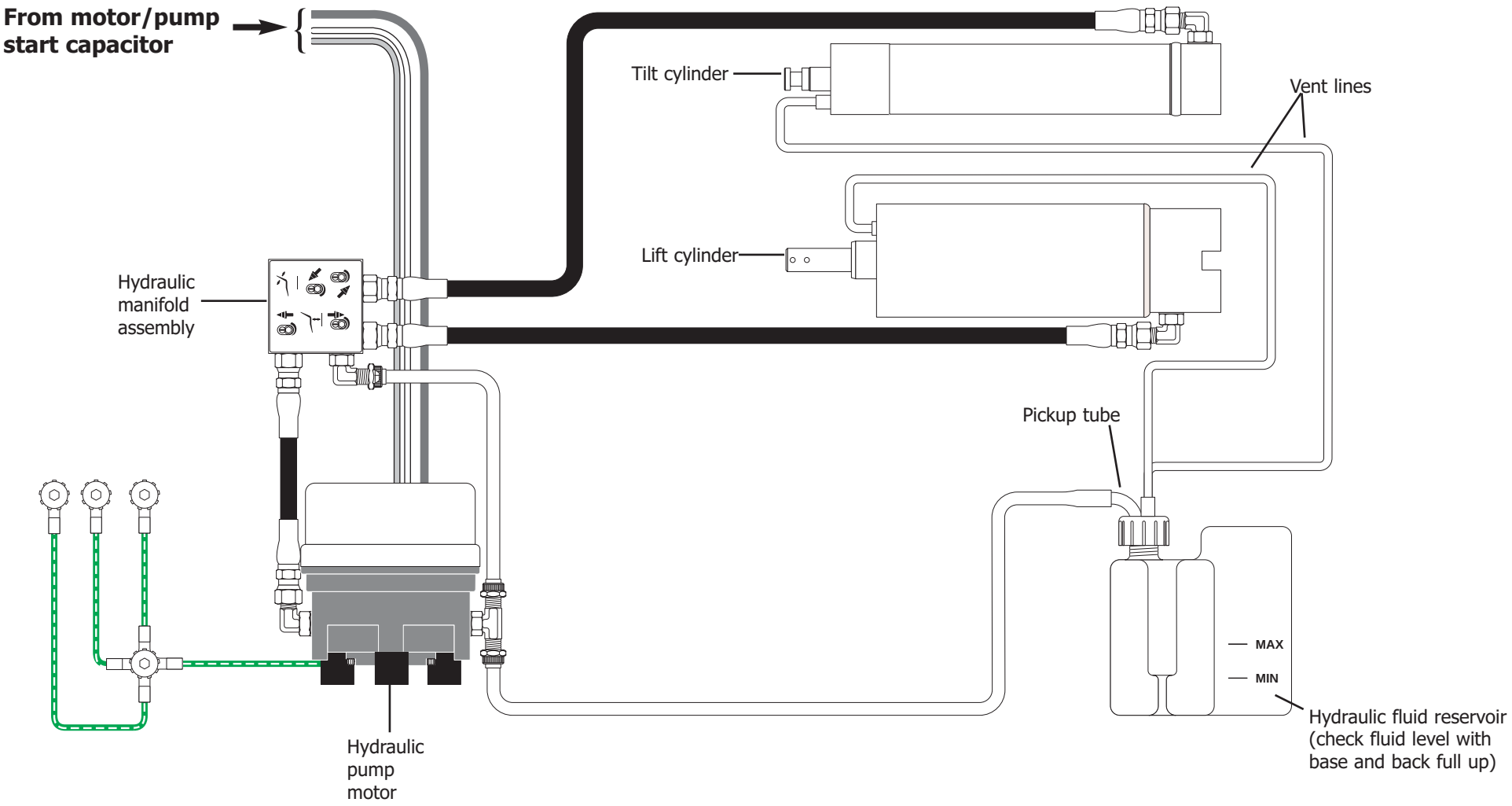


## Hydraulic Manifold

| Item # | Part Number | Description |
|---|---|---|
| 1 | 61.1335.00<br>61.1336.00<br>61.1337.00 | Solenoid, 8-watt, 100V, Yellow wires<br>Solenoid, 8-watt, 120 V, Black wires<br>Solenoid, 8-watt, 240 V, Red wires |
| 2 | 030.015.02 | O-ring pkg 10 |
| 3 | 030.004.02 | O-ring, AS568-004 pkg 10 |
| 4 | 61.0460.00 | Flow adjust screw with o-ring |
| 5 | 002.118.01 | Screw, button-head, socket |
| 6. | 61.1333.00<br>61.1334.00 | Manifold assy, hyd, 120V<br>Manifold assy, hyd, 240V |



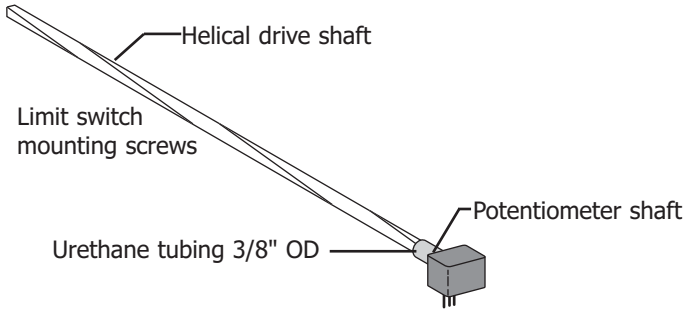
**NOTE**: Use only A-dec fluid P/N 61.0197.00.

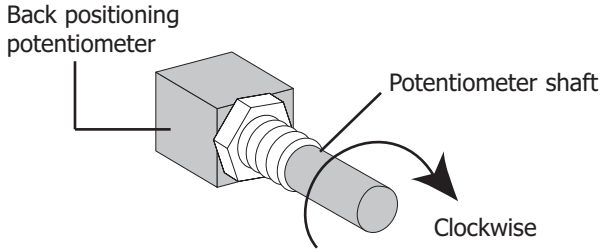


## Removing the Helical Drive Shaft

Follow these steps to remove the limit switch and the helical drive shaft from the potentiometer shaft.

| Task | Description |
|---|---|
| 1 | Position the chair back full down, loosen the four screws under the toeboard and remove the seat upholstery. |
| 2 | Raise the toeboard assembly and disconnect the limit switch wiring harness from the limit switch. |
| 3 | Remove the limit switch mounting screws and limit switch from the bracket. Lower the toeboard, if necessary, to access the rear mounting screw. Do not bend the switch arm. |
| 4 | Remove the bracket mounting screws. Manually raise or lower the toeboard for access if necessary. |
| 5 | Remove helical drive shaft from potentiometer shaft. While holding the helical shaft, reach underneath the chair to the base of the backrest. Grasp the bracket and pull away from the helical shaft. |
| 6 | Remove the helical drive shaft from the chair by moving it toward the chair backrest and then slightly to the side to dislodge it from the holder and guide. |



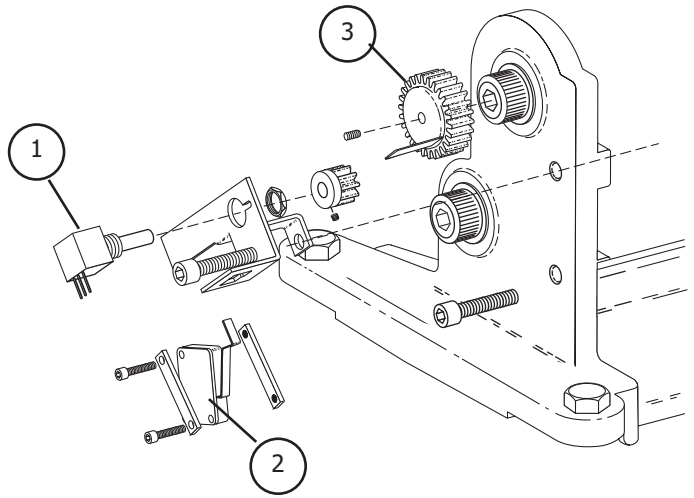



## Base Positioning Potentiometer and Limit Switch

| Item # | Part Number | Description |
|---|---|---|
| 1 | 041.372.00 | Potentiometer, 5K Ohm, +20%, 1W, w/nut |
| 2 | 044.049.01 | Limit switch, modified |
| 3. | 61.1295.00 | Gear, 24 pitch, 30 tooth |

**CAUTION**

Ensure that the large drive gear is secure (does not turn) on the head of the bolt. Do not over tighten (or "bottom" out) the setscrew.

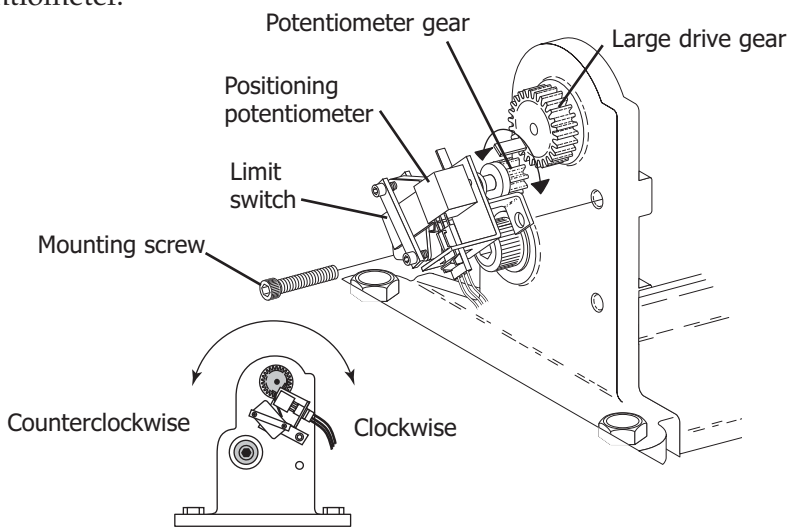



**Replacing Base Positioning Potentiometer, Limit Switch and Gear**

## Adjusting the Base Positioning Potentiometer

Follow these steps to adjust the base positioning potentiometer.

| Task | Description |
|---|---|
| 1 | Remove the motor/pump cover and position the chair base down. |
| 2 | Remove the mounting screw. |
| 3 | Turn the potentiometer gear clockwise until it stops. |
| 4 | Align the potentiometer assembly, then turn the potentiometer gear counterclockwise two teeth (relative to one tooth on the large drive gear). |
| 5 | Ensure all electrical connections to the limit switch and positioning potentiometer are complete. |
| 6 | Raise the chair base while observing the two gears for binding. |




**Adjusting the Base Positioning Potentiometer**

**NOTE**: Do not raise the base to full up until you have checked the base up limit switch for proper adjustment (see *Adjusting the Base Up Limit Switch*).

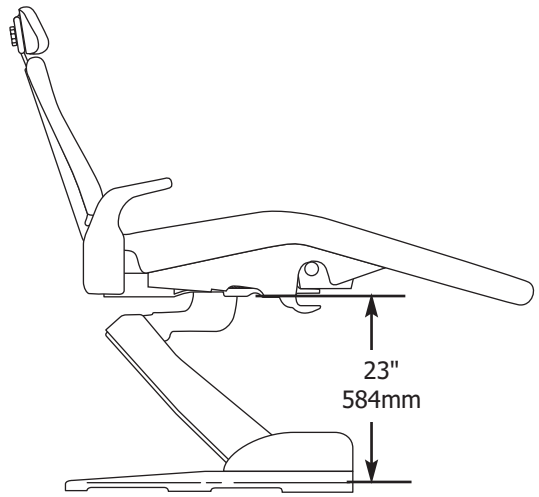
**CAUTION**

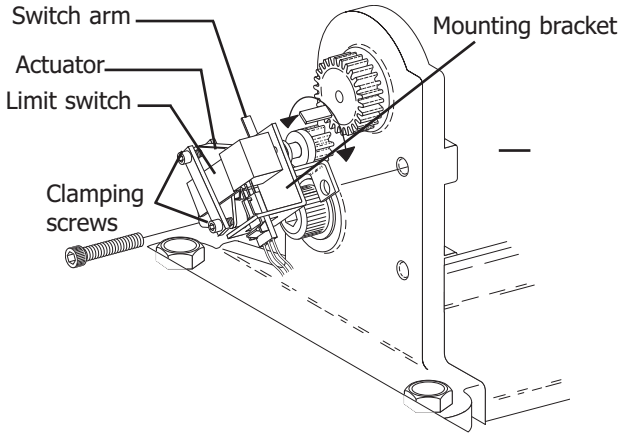
Ensure that the large drive gear is secure (does not turn) on the head of the bolt. Do not over tighten (or "bottom" out) the setscrew.

## Adjusting the Base up Limit Switch

To adjust the base up limit switch, do the following.

| Task | Description |
|---|---|
| 1 | Remove the motor/pump cover. |
| 2 | Loosen the two screws clamping the limit switch to the mounting bracket. |
| 3 | Position the chair base up until the distance from the floor to the base of the upper chair casting is 23" (584mm). |
| 4 | Push the limit switch against the actuator on the drive gear until the switch opens (clicks).<br>**NOTE**: For correct limit switch actuation, the actuator tab on the large gear should be at the 5:30 clock position when the chair is full base down. |
| 5 | Tighten the clamping screws, making sure they do not hit the gear. |
| 6 | Lower the chair base down until the limit switch has closed, then raise the chair full base up. Check the distance from the floor to the base of the chair casting to ensure it is 23" (584mm). |



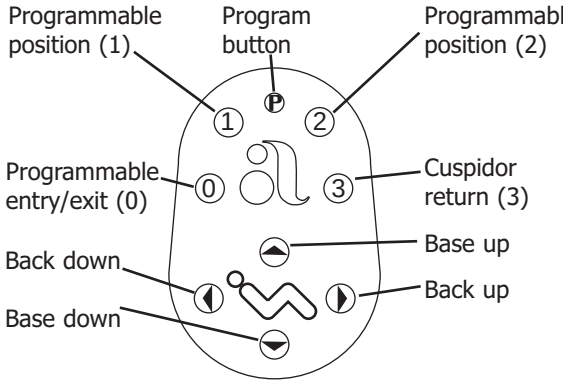




**NOTE**: Positioning potentiometer omitted for clarity.

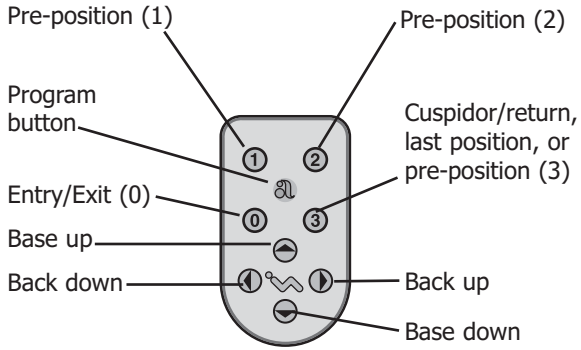
## Programming the Chair

Follow these steps to set the auto-positioning for the chair.

| Task | Description |
|---|---|
| 1 | Use the footswitch or touchpad to set the chair at the desired position for base and back. |
| 2 | Press and release the program button.<br>Result: You will hear a single beep. |
| 3 | Within four seconds, press an automatic position button (0, 1, 2, or 3) on the footswitch or touchpad to store the chair position. On an 8-function footswitch, move the actuator to the desired position.<br>Result: You will hear three beeps confirming that the function has been programmed.<br>**NOTE:** PCBs manufactured before 1994, do not beep. Test the programming by trying it. |



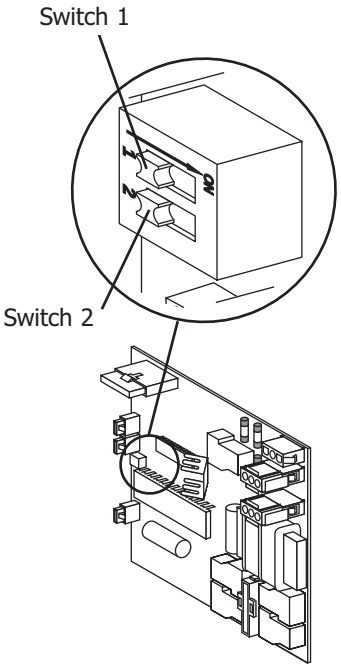

**8-Button Footswitch**




**Performer III Touchpad**

Replacement membrane P/N 61.3048.00

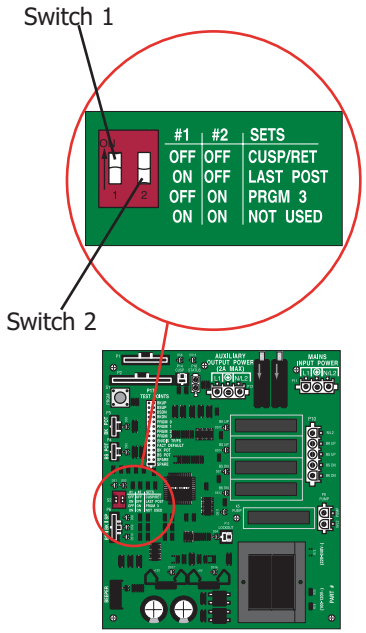
## Programming Function 3




**Function 3 DIP Switch before 2000**

| Function | Description | Programming |
|---|---|---|
| Cuspidor/Return<br>**NOTE:** Chairs with S/N J467728 and later are factory set with function 3 as cuspidor/return | Used to raise the chair back to a programmable upright position providing the patient access to the cuspidor. Momentarily pushing button 3 on the touchpad or 8-button footswitch, or moving the actuator to position three on the 8-function footswitch, returns the back to the previous position. | Switches 1 and 2 are OFF. |
| Last Position | A non-programmable position that simply moves the chair base and back to their previous positions. | Switch 1 is ON and switch 2 is OFF.<br>Go back and forth between two positions by momentarily moving the righthand actuator on the 8-function footswitch to position 3 or pressing number 3 on the touchpad or 8-button footswitch. |
| Programmable Position<br>**NOTE:** Chairs up to S/N J467727 are factory set with function 3 as a programmable position | This option is used to set the base and back to a predesignated position. It allows this function to be programmed like 0, 1, and 2. | Switch 1 is OFF and switch 2 is ON. Move the chair to the desired position. Press and release the program button. After the beep, push button 3 on the touchpad or 8-button footswitch or move the actuator to position 3 on the 8-function footswitch. The single beep confirms the position is programmed. |

## Programming Function 3

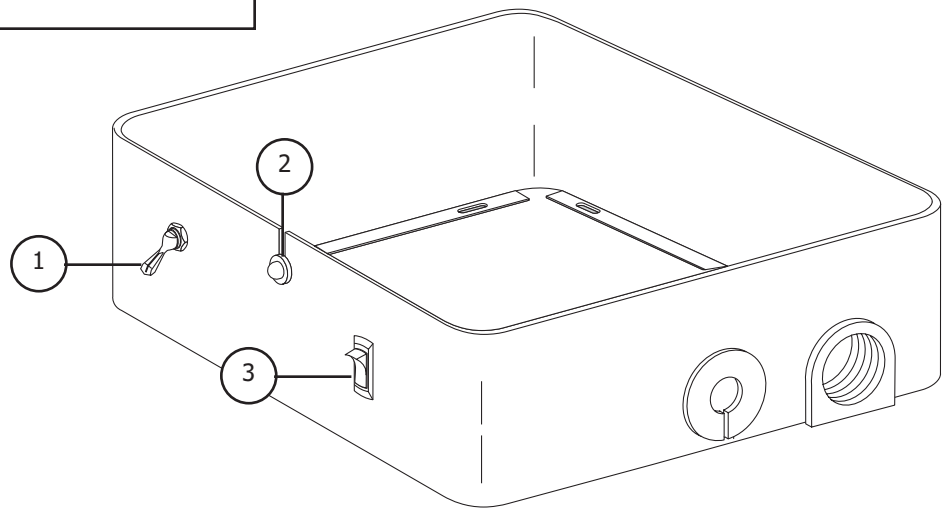



**Function 3 DIP Switch after 2000**

| Function | Description | Programming |
|---|---|---|
| Cuspidor/Return | Used to raise the chair back to a programmable upright position providing the patient access to the cuspidor. Momentarily pushing button 3 on the touchpad or 8-button footswitch, or the actuator to position 3 on the 8-function footswitch will return the back to the previous position. | Both switches 1 and 2 are OFF. |
| Last Position | A non-programmable position that simply moves the chair base and back to their previous positions. | Switch 1 is ON and switch 2 is OFF.<br>Go back and forth between two positions by momentarily pushing the right hand rocker button to position 3 or pressing number 3 on the touchpad. |
| Programmable Position | Used to set the base and back to a predesignated position. | Switch 1 is OFF and switch 2 is ON. Move the chair to the desired position. Press and release the program button. After the tone, push button 3 on the touchpad or footswitch or move the actuator to position 3 on the 8-function footswitch. The audible tone confirms the position is programmed. |

## Floor Box

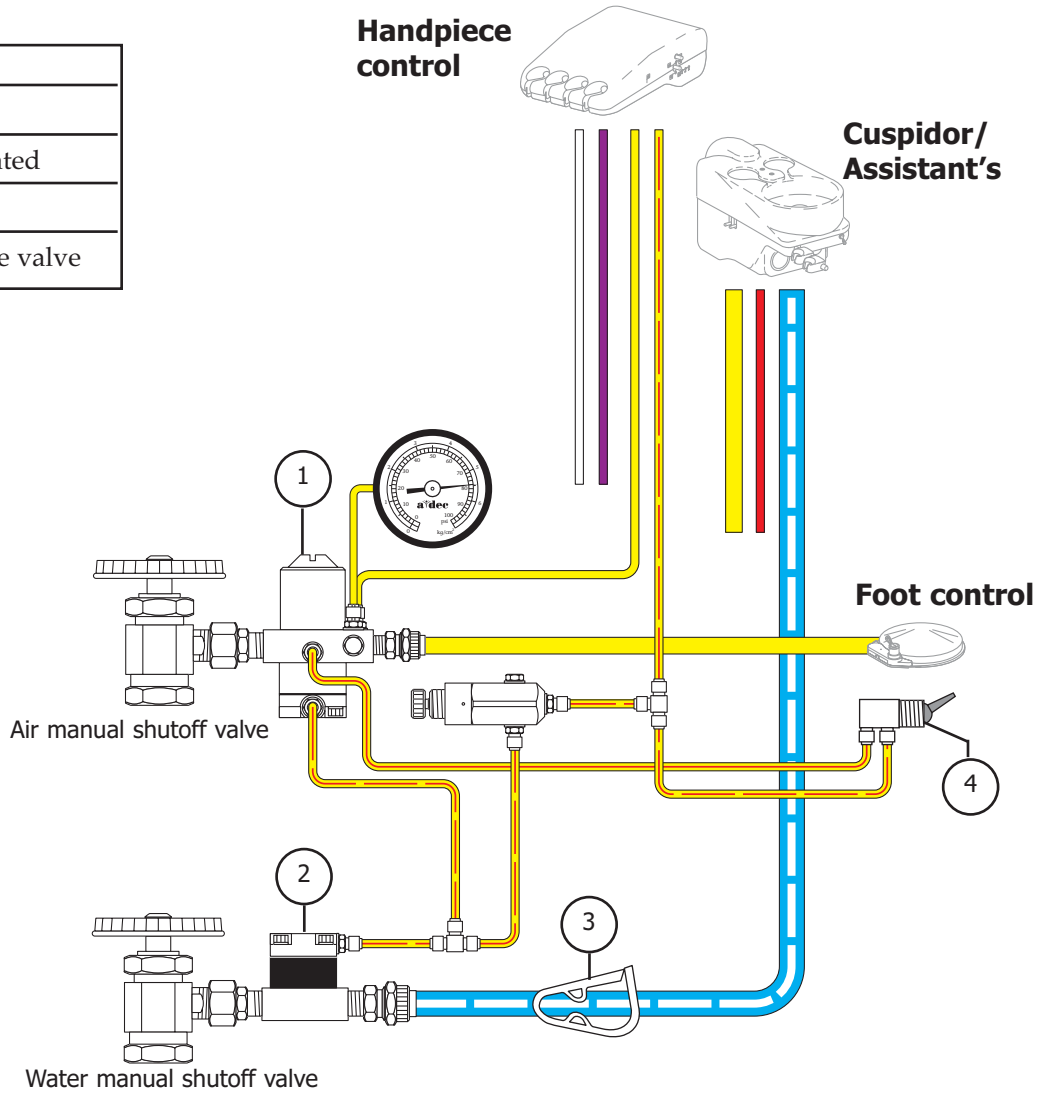
| Item # | Part Number | Description |
|---|---|---|
| 1 | 33.0048.03 | Master On/Off (3-way) toggle valve |
| 2 | 041.582.00 | 12 volt green light; not installed on all floor boxes (replace as a complete assembly) |
| 3 | 041.512.00 | Light intensity rocker switch (replace as a complete assembly) |
| | 90.1045.00 | Kit, intensity light switch cable. |



## Floor Box

| Item # | Part Number | Description |
|---|---|---|
| 1 | 24.0469.00 | Air filter/regulator valve |
| 2 | 34.0033.00 | Water shutoff valve, air operated |
| 3 | 025.052.00 | Pinch clamp |
| 4. | 33.0048.03 | Master On/Off (3-way) toggle valve |

**NOTE**: Do not connect the water shutoff valve (34.0033.00) when the unit does not include a cuspidor or a water quick disconnect.

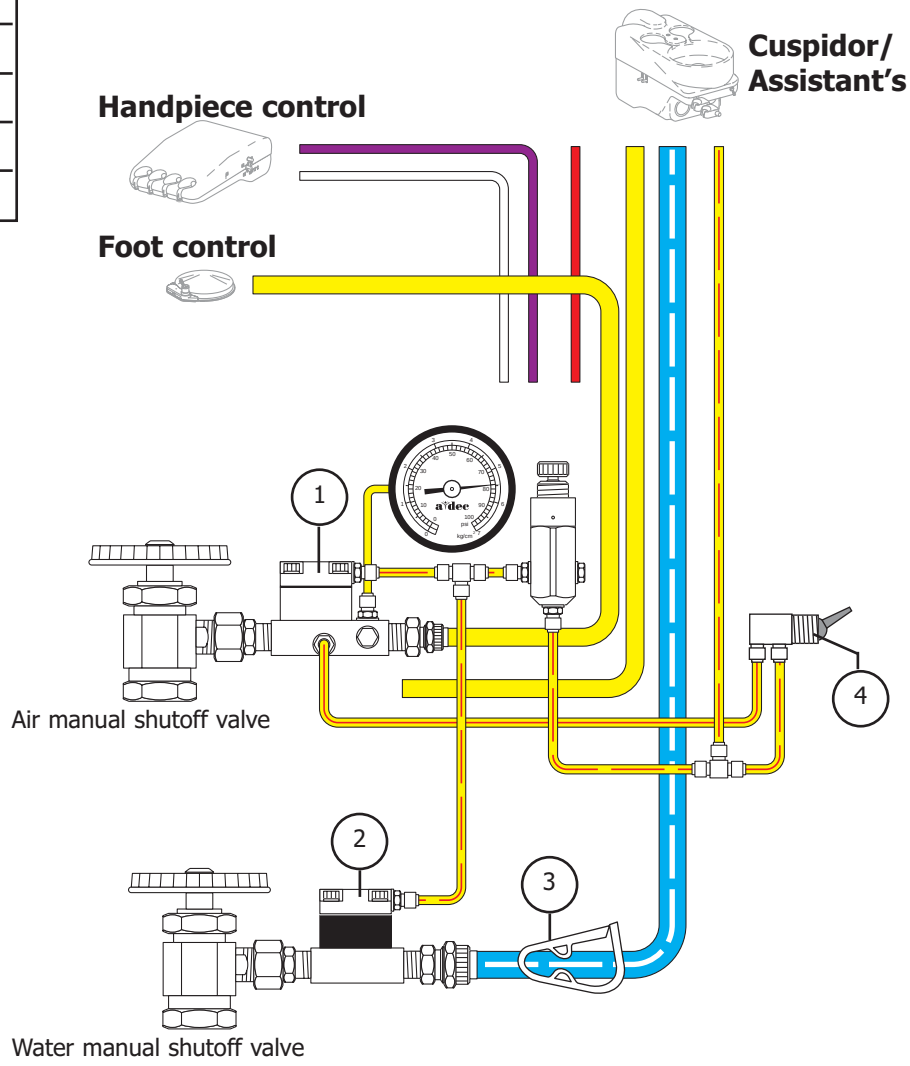


After December 1995
(only with the International Performer I chair)

## Floor Box

| Item # | Part Number | Description |
|---|---|---|
| 1 | 24.0372.00 | Air regulator valve |
| 2 | 34.0033.00 | Water shutoff valve, air operated |
| 3 | 025.052.00 | Pinch clamp |
| 4 | 33.0048.03 | Master On/Off (3-way) toggle valve |

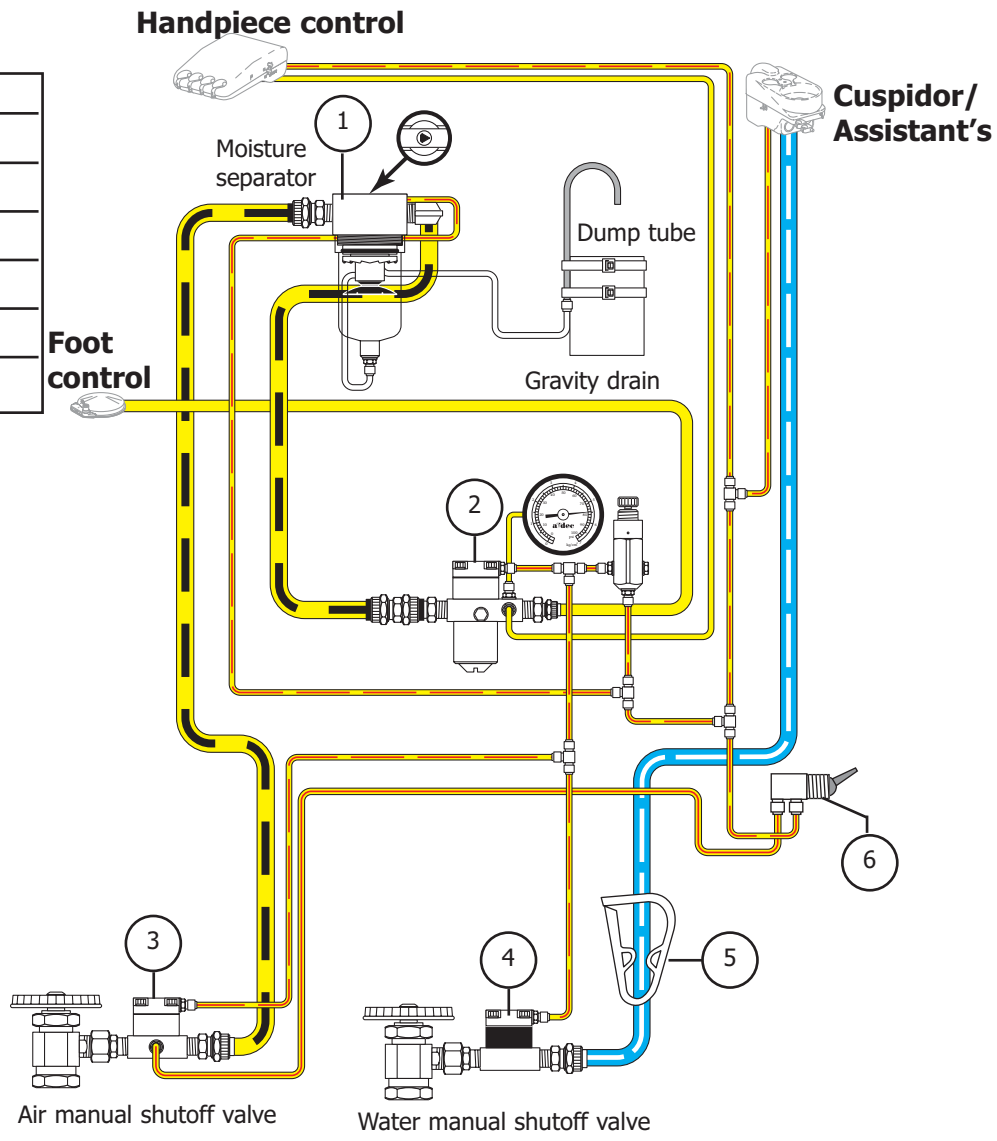
**NOTE**: Do not connect the water shutoff valve (34.0033.00) when the unit does not include a cuspidor or a water quick disconnect.



## Floor Box with Automatic Moisture Separator

| Item # | Part Number | Description |
|---|---|---|
| 1 | 90.1027.03 | Automatic moisture separator |
| 2 | 24.0469.00 | Air filter/regulator valve |
| 3 | 34.0037.00 | Air shutoff valve, air operated |
| 4 | 34.0033.00 | Water shutoff valve, air operated |
| 5 | 025.052.00 | Pinch clamp |
| 6 | 33.0048.03 | Master On/Off (3-way) toggle valve |

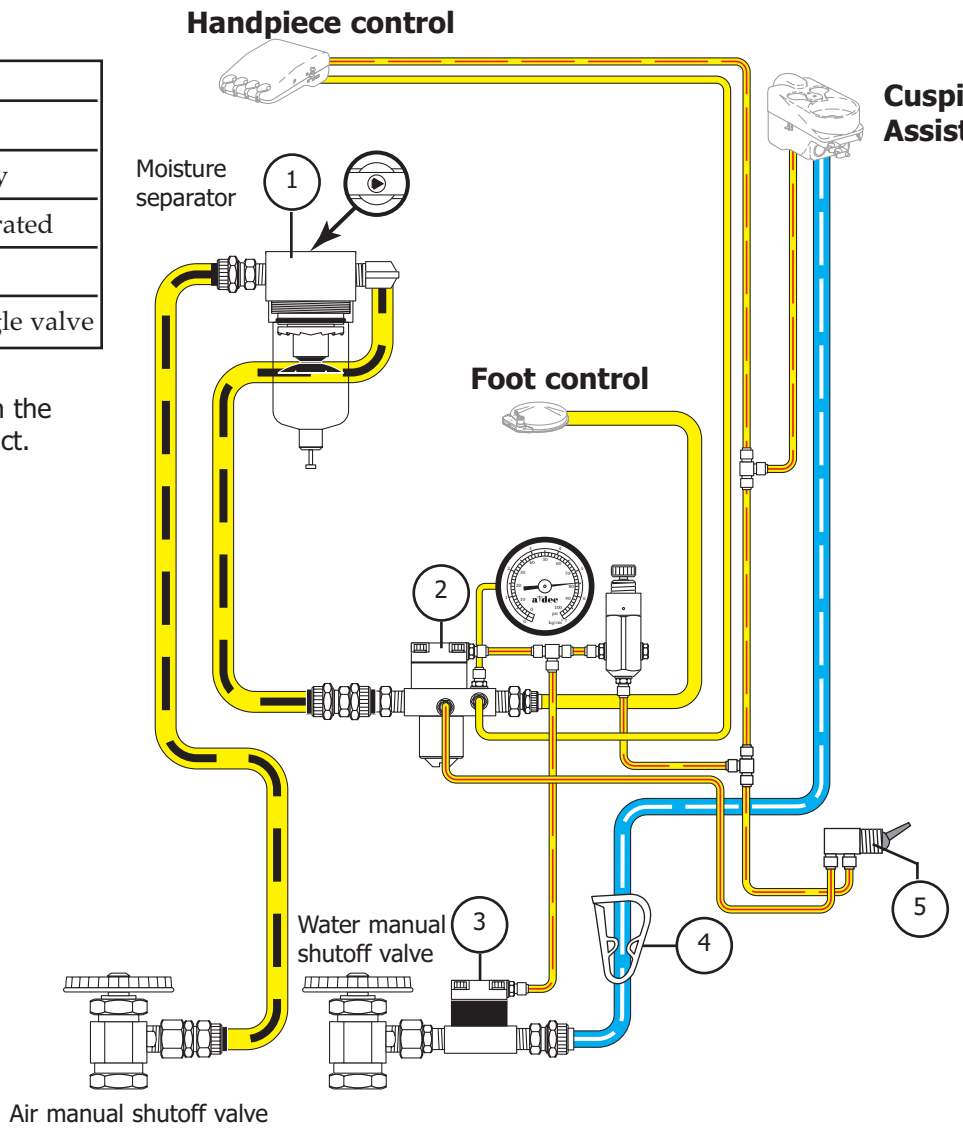
**NOTE**: Do not connect the water shutoff valve (34.0033.00) when the unit does not include a cuspidor or a water quick disconnect.



## Floor Box with Manual Moisture Separator

| Item # | Part Number | Description |
|---|---|---|
| 1 | | Moisture separator |
| 2 | 24.0469.00 | Air filter/regulator assembly |
| 3 | 34.0033.00 | Water shutoff valve, air operated |
| 4 | 025.052.00 | Pinch clamp |
| 5 | 33.0048.03 | Master On/Off (3-way) toggle valve |

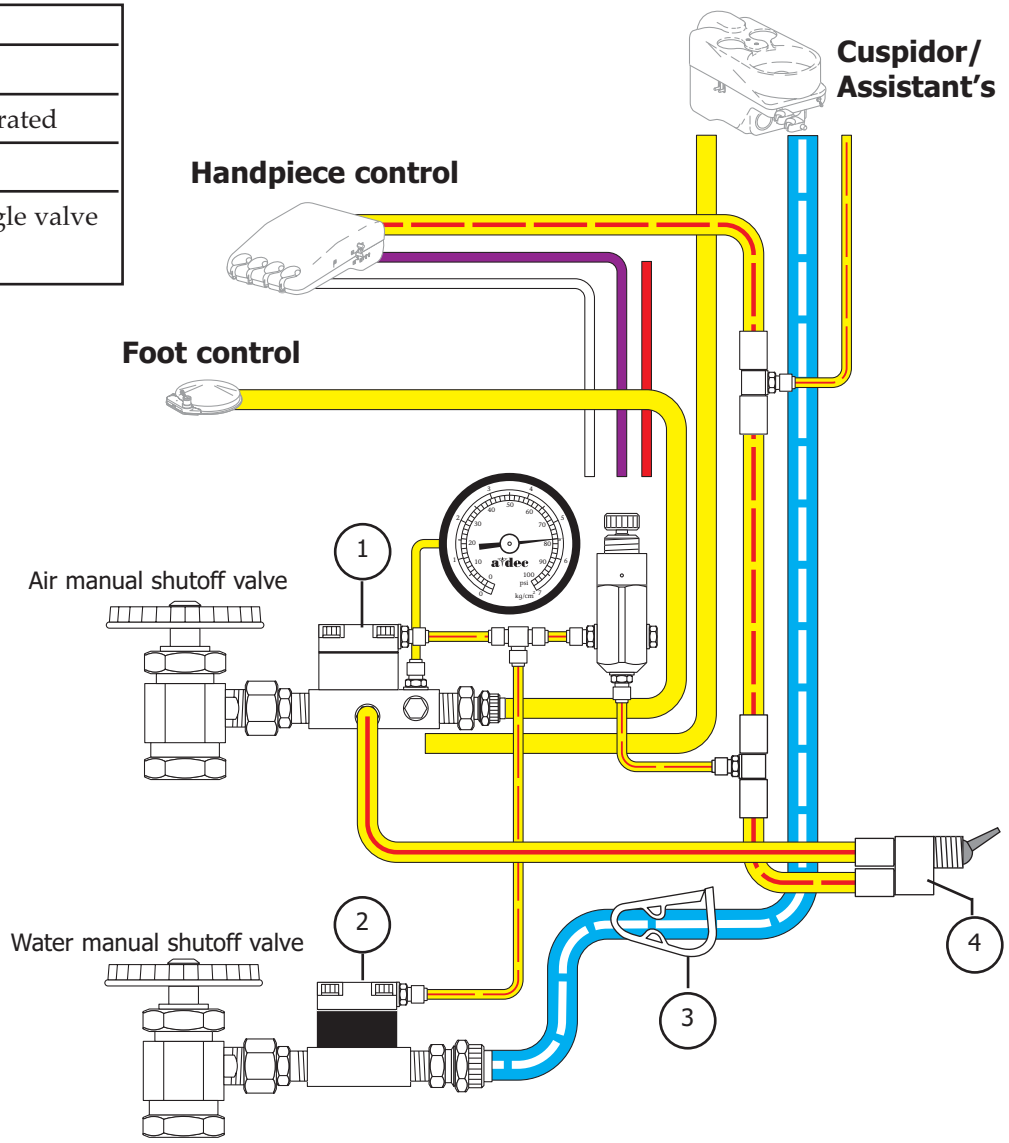
**NOTE**: Do not connect the water shutoff valve (34.0033.00) when the unit does not include a cuspidor or a water quick disconnect.



## Floor Box

| Item # | Part Number | Description |
|---|---|---|
| 1 | 24.0372.00 | Air regulator valve |
| 2 | 34.0033.00 | Water shutoff valve, air operated |
| 3 | 025.052.00 | Pinch clamp |
| 4 | 33.0080.01 | Master On/Off (3-way) toggle valve with 4" barbs |

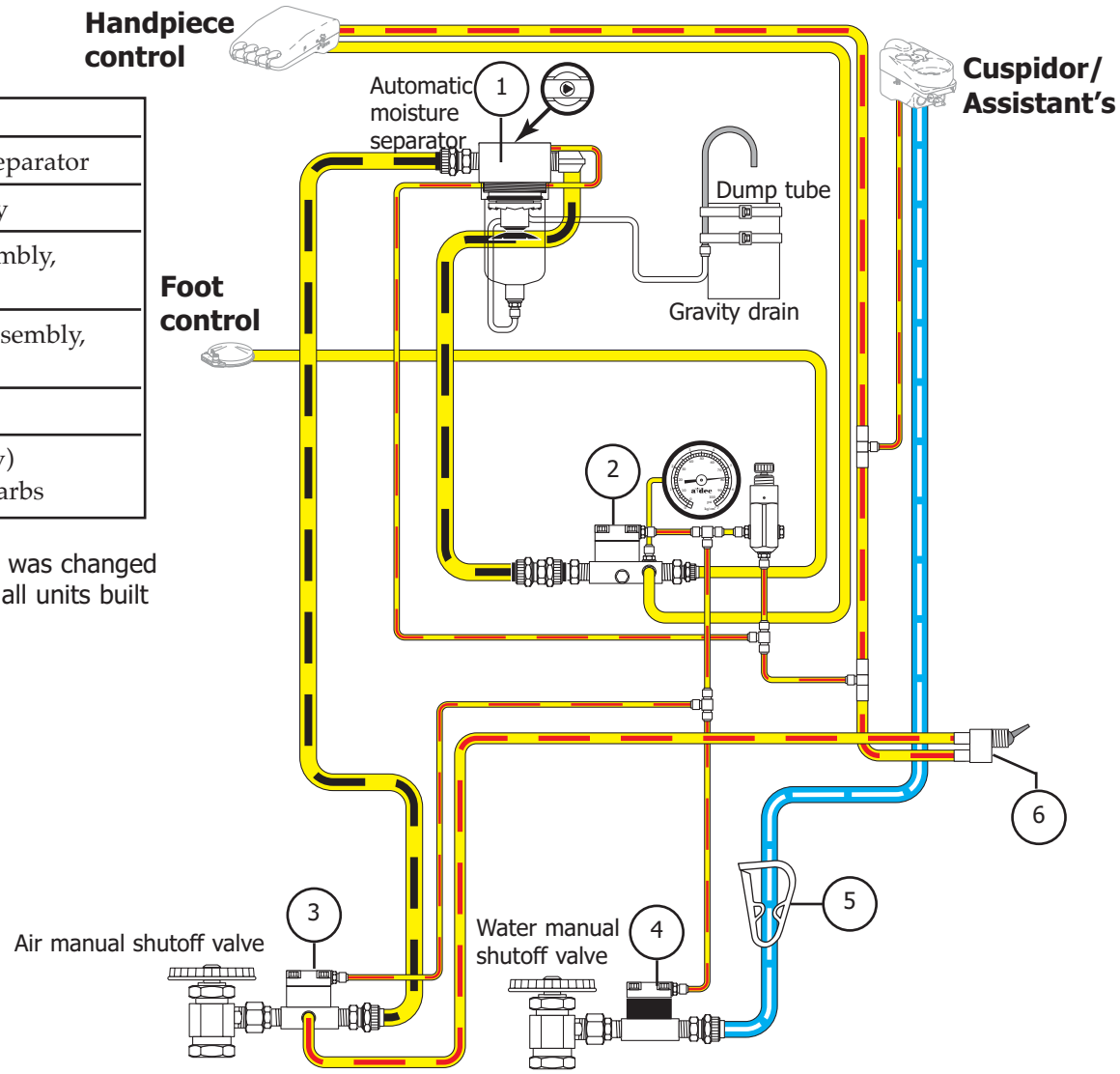
**NOTE**: The 1/4" ID pilot air tubing (yellow with red dashes) was changed to 1/8" ID pilot air tubing (yellow with red stripe) in all units built after December 1995.



## Floor Box with Automatic Moisture Separator

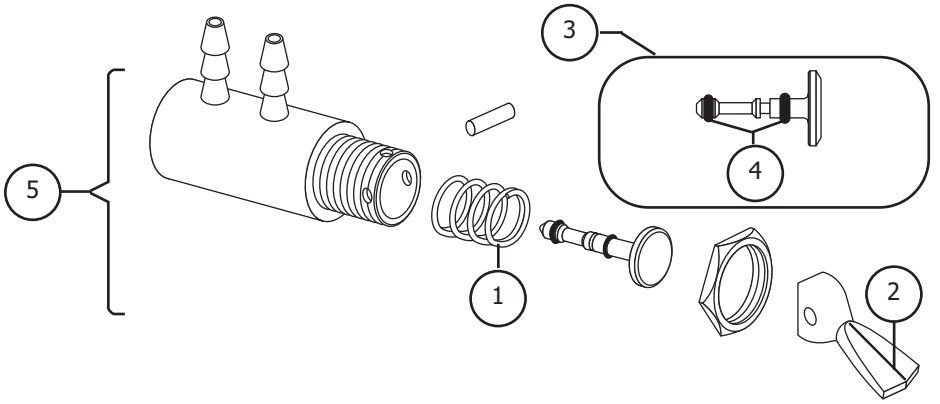
| Item # | Part Number | Description |
|---|---|---|
| 1 | 90.1027.03 | Automatic moisture separator |
| 2 | 24.0469.00 | Air regulator assembly |
| 3 | 34.0037.00 | Air shutoff valve assembly, air operated |
| 4 | 34.0033.00 | Water shutoff valve assembly, air operated |
| 5 | 025.052.00 | Pinch clamp |
| 6 | 33.0080.01 | Master On/Off (3-way) toggle valve with 4" barbs |

**NOTE**: The 1/4" ID pilot air tubing (yellow with red dashes) was changed to 1/8" ID pilot air tubing (yellow with red stripe) in all units built after December 1995.



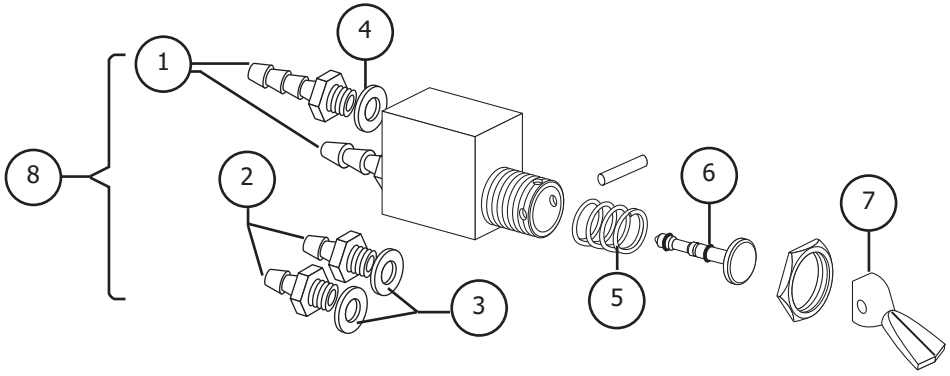
## Master On/Off Toggles with Valve, 3-way

| Item # | Part Number | Description |
|---|---|---|
| 1 | 22.0040.00 | Spring |
| 2 | 33.0031.01 | Gray toggle and pin |
| 3 | 29.0840.00 | Stem with o-rings, 3-way |
| 4 | 030.001.02 | O-ring pkg 10 |
| 8 | 33.0048.03 | Master On/Off toggle, 3-way |




**After December 1995**

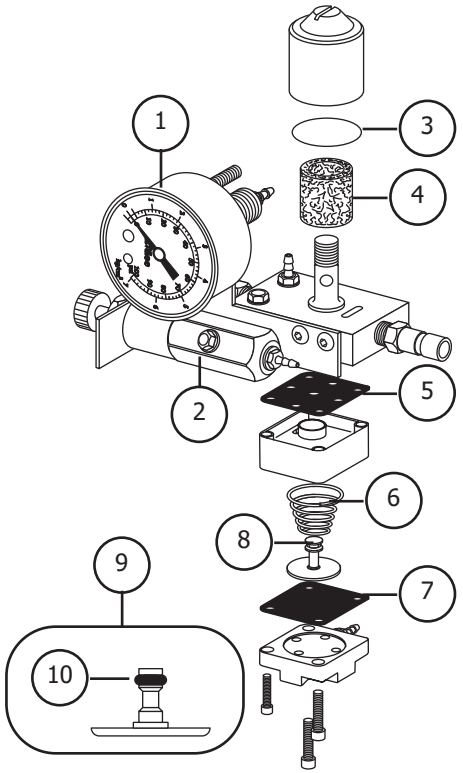
| Item # | Part Number | Description |
|---|---|---|
| 1 | 023.001.03 | Barb, 1/4" pkg 10 |
| 2 | 023.004.03 | Barb, 1/8" pkg 10 |
| 3 | 004.005.02 | Washer pkg 10 |
| 4 | 004.005.02 | Washer pkg 10 |
| 5 | 22.0040.00 | Spring |
| 6 | 29.0840.00 | Stem with O-ring, 3-way |
| 7 | 33.0031.01 | Gray toggle with pin |
| 8 | 33.0080.01 | Master On/Off Toggle, 3-way |




**After January 1996**

## Air Filter/Regulator Valve

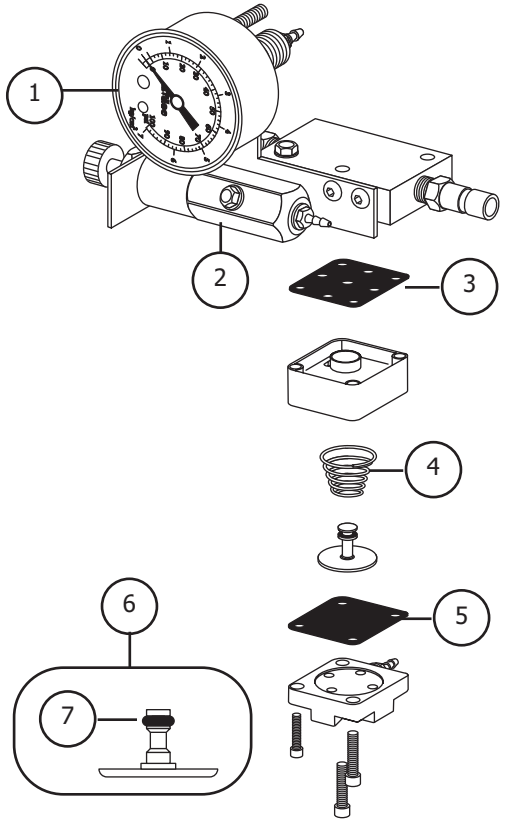
| Item # | Part Number | Description |
|---|---|---|
| 1 | 026.118.00 | Gauge, 0-100 psi |
| 2 | 24.0182.02 | Pre-regulator, 80 psi, relieving |
| 3 | 030.019.03 | O-ring pkg 10 |
| 4 | 24.0234.01 | Filter element pkg 6 |
| 5 | 24.0137.01 | Gasket, 9-hole pkg 10 |
| 6 | 22.0460.00 | Spring conical |
| 7 | 22.0440.02 | Diaphragm pkg 10 |
| 8 | 24.0132.00 | Piston with o-ring |
| 9 | 030.003.02 | O-ring pkg 10 |




**24.0469.00**

## Air Regulator Valve

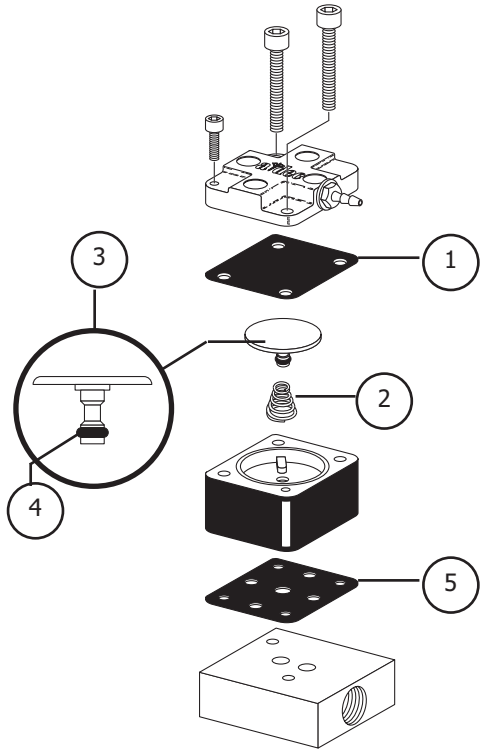
| Item # | Part Number | Description |
|---|---|---|
| 1 | 026.118.00 | Gauge, 0-100 psi |
| 2 | 24.0182.02 | Pre-regulator, 80 psi, relieving |
| 3 | 24.0137.01 | Gasket, 9-hole pkg 10 |
| 4 | 22.0460.00 | Spring conical |
| 5 | 22.0440.02 | Diaphragm pkg 10 |
| 6 | 24.0132.00 | Piston with o-ring |
| 7 | 030.003.02 | O-ring pkg 10 |




**24.0363.04**

## Water Shutoff Valve, Air Operated

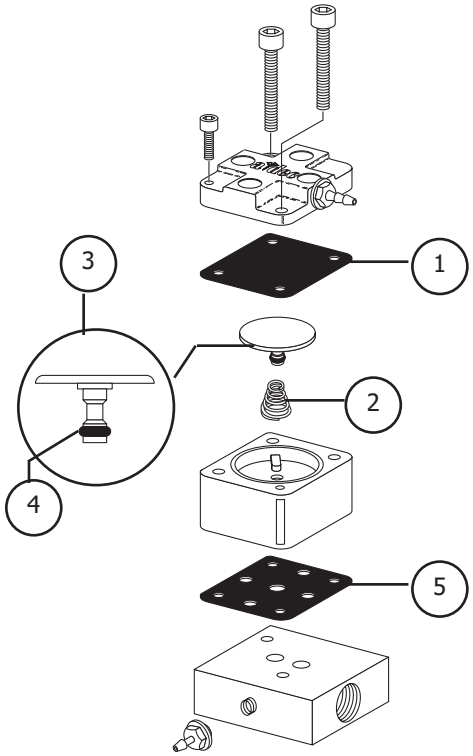
| Item # | Part Number | Description |
|---|---|---|
| 1 | 22.0440.02 | Diaphragm pkg 10 |
| 2 | 013.032.00 | Spring conical |
| 3 | 24.0132.00 | Piston with O-ring |
| 4 | 030.003.02 | O-ring pkg 10 |
| 5 | 24.0137.01 | Gasket, 9-hole pkg 10 |




**34.0033.00**

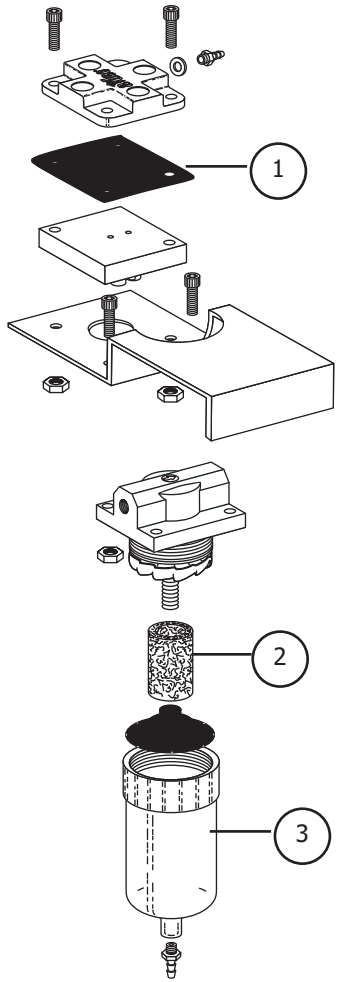
## Air Shutoff Valve, Air Operated

| Item # | Part Number | Description |
|---|---|---|
| 1 | 22.0440.02 | Diaphragm pkg 10 |
| 2 | 22.0460.00 | Spring conical |
| 3 | 24.0132.00 | Piston with o-ring |
| 4 | 030.003.02 | O-ring pkg 10 |
| 5 | 24.0137.01 | Gasket, 9-hole pkg10 |



## Automatic Moisture Separator

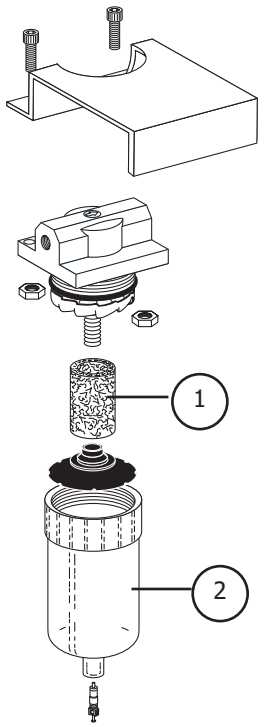
| Item # | Part Number | Description |
|---|---|---|
| 1 | 22.0440.02 | Diaphragm pkg 10 |
| 2 | 97.0280.02 | Filter element pkg 6, 5 micron filtration (not a bacterial filter) |
| 3 | 97.0290.00 | Bowl with seal |




90.1027.30

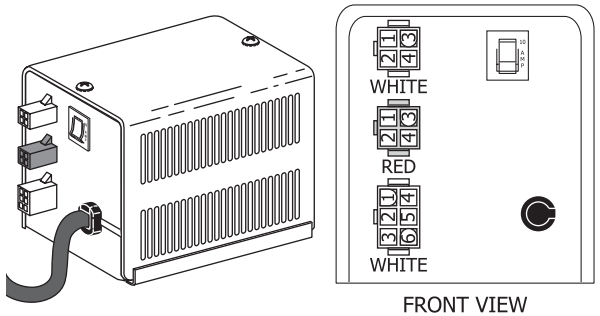
## Manual Moisture Separator

| Item # | Part Number | Description |
|---|---|---|
| 1 | 97.0280.02 | Filter element pkg 6, 5 micron filtration (not a bacterial filter) |
| 2 | 97.0290.00 | Bowl with seal |



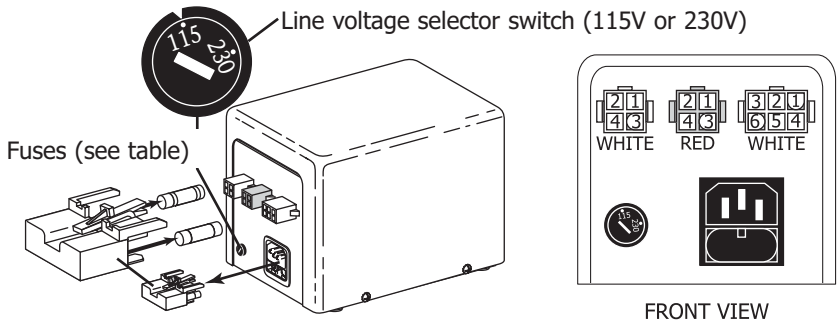
## 80-Watt Power Supply

**NOTE**: No serviceable parts. Replace as a complete assembly.




**After January 1998**

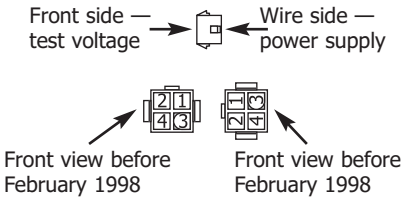
| | |
|---|---|
| **28.1345.00** | **115 VAC .80A, 50-60Hz** |
| **47.2030.00** | **100 VAC, .90A, 50-60Hz** |
| **47.2031.00** | **230 VAC, .40A, 50-60Hz** |

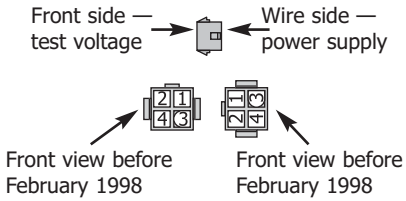


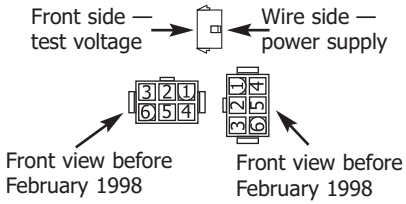

**Before February 1998**
**80-Watt, 115/230 Volt Switchable**

**WARNING**

Make sure the line voltage selector switch is set on the correct voltage (115V or 230V).




| Wire Before Feb 98 | Voltage | Wire After Feb 98 |
|---|---|---|
| 1 Grn/Yel | Ground | 1 Grn/Yel |
| 2 Black | 0 VAC | 2 Black |
| 3 Red | 24 Volts | 3 Gray |
| 4 Orange | Not used | 4 Open |

**White 4-Pin Connector**

| Wire Before Feb 98 | Voltage | Wire After Feb 98 |
|---|---|---|
| 1 Grn/Yel | Ground | 1 Grn/Yel |
| 2 Brown | 0 VAC | 2 Black |
| 3 Open | Not used | 3 Open |
| 4 Open | 10.8/12.1 | 4 White |

**Red 4-Pin Connector**

| Wire Before Feb 98 | Voltage | Wire After Feb 98 |
|---|---|---|
| 1 Grn/Yel | Ground | 1 Grn/Yel |
| 2 White | 0 VAC | 2 Black |
| 3 Orange | 10.8/12.1 V | 3 White |
| 4 Yellow | 10.8 V | 4 Orange |
| 5 Violet | 12.1 Volts | 5 Yellow |
| 6 Red | 12.1 Volts | 6 Yellow |

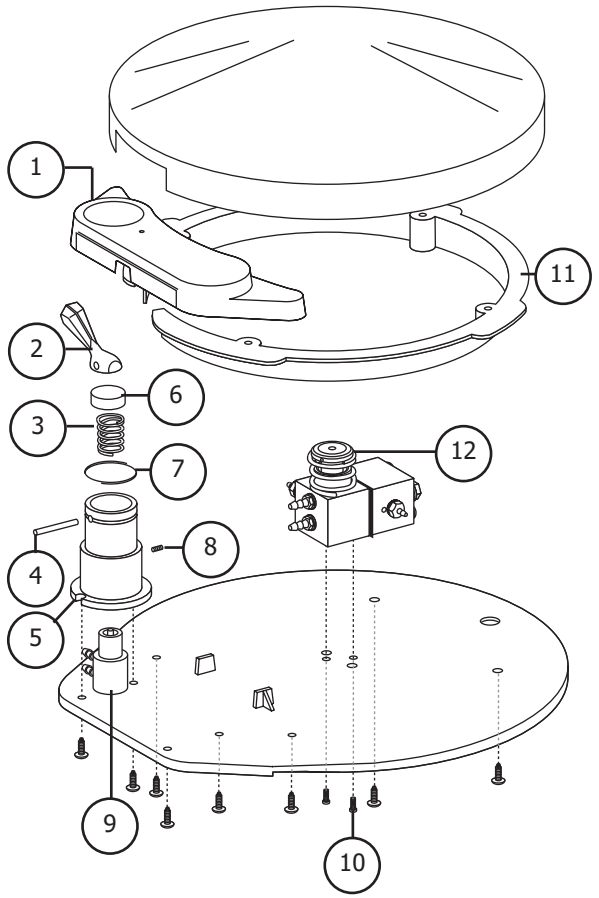
**White 6-Pin Connector**

**Selector Switch Voltage/Fuse Table**

| Mains Voltage | Part Number | Description |
|---|---|---|
| 115 VAC | 044.191.00 | 1.25 A Time Lag Fuse, 5 x 20 mm<br>Replaces 044.148.00. |
| 230 VAC | 044.190.00 | 630 mA Time Lag Fuse, 5 x 20 mm<br>Replaces 044.185.00. |

## Foot Control III

| Item# | Part number | Description |
|---|---|---|
| 1 | 38.0320.02 | Foot control housing |
| 2 | 38.0075.03 | Toggle and pin, dark surf |
| 3 | 22.0040.00 | Spring |
| 4 | 011.016.00 | Pin |
| 5 | 38.0072.03 | Valve holder, dark surf |
| 6 | 38.0066.00 | Cap |
| 7 | 010.056.00 | Retainer |
| 8 | 007.002.00 | Setscrew pkg 10 |
| 9 | 33.0138.00 | Micro-valve |
| 10 | 003.078.00 | Screws, valve mounting |
| 11 | 38.0237.00 | Retaining ring, internal |
| *12 | 38.0760.00 | FC3 piston |

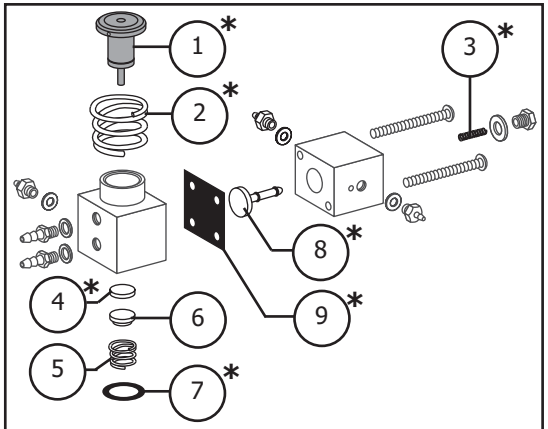



**NOTE**: * Parts included in Foot Control III service kit.
** Parts not used in foot controls after 12/96. All parts in the 38.0607.01 are included in Foot Control II service kit.

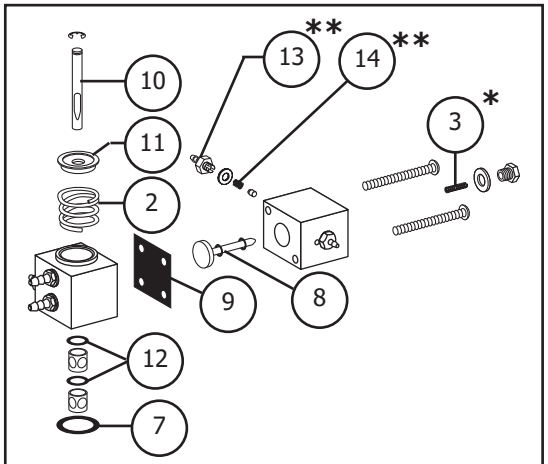
## Foot Control II &III Valves

| Item# | Part number | Description |
|---|---|---|
| *1 | 38.0760.00 | FC3 piston |
| *2 | 013.011.00 | Spring |
| *3 | 10.0440.00 | Spring |
| *4 | 22.0060.00 | Poppet |
| *5 | 22.0580.00 | Spring |
| 6 | 22.0050.00 | Spring cap |
| *7 | 030.012.02 | O-ring |
| *8 | 22.0778.00 | Stem with o-rings |
| *9 | 38.0054.02 | Diaphragm pkg 10 |
| 10 | 38.0246.00 | Stem with E-ring |
| 11 | 38.0552.00 | Ring return, valve stem |
| 12 | 030.008.02 | O-ring pkg 10 |
| **13 | 023.040.00 | Check valve barb, slotted |
| **14 | 013.053.00 | Spring |

**NOTE**: * Parts included in Foot Control III service kit.
** Parts not used in foot controls after 12/96. All parts in the 38.0607.01 are included in Foot Control II service kit.



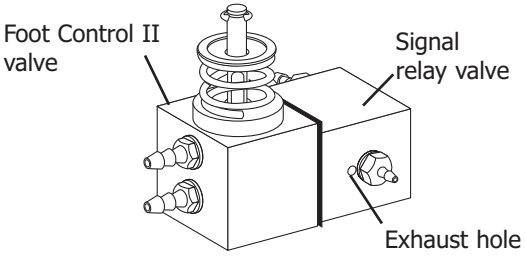

**Foot Control III Valve**



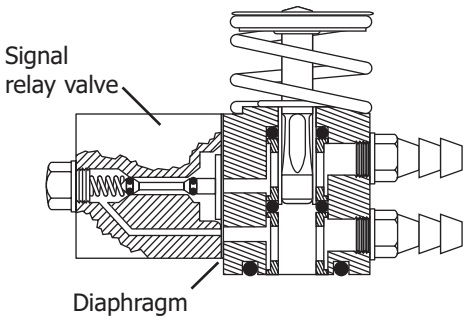

**Foot Control II Valve**

## Foot Control II

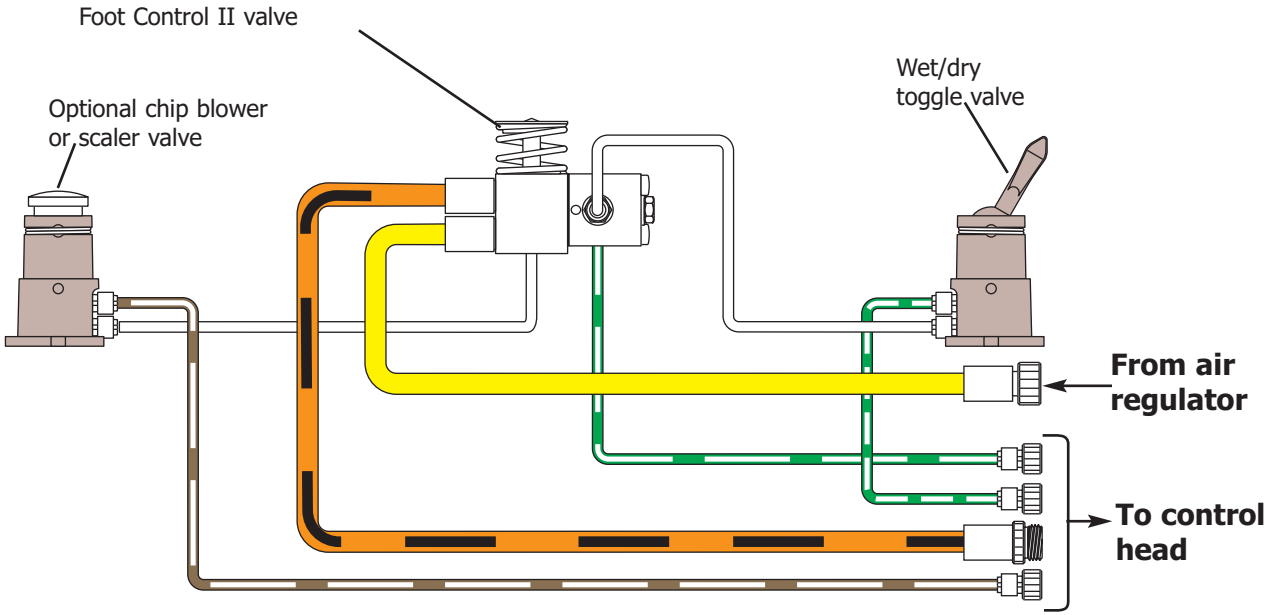
Foot Control I and II were used on A-dec equipment before October 1999. These units are no longer available.




**Foot Control II Valve Assembly**




**Foot Control II Cross View**

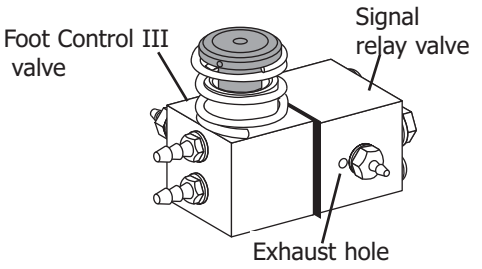



**WARNING**

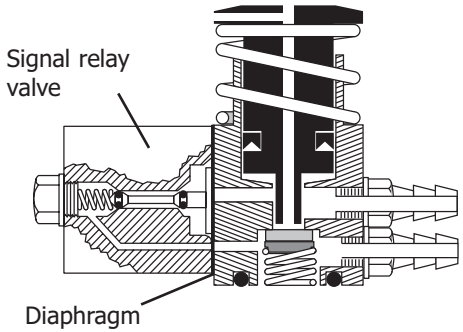
When working on Foot Control II, move the master On/Off toggle to the OFF position and bleed the system of air pressure. Do this before removing the foot control disc to prevent the foot control stem from being forcefully ejected from the foot control valve.

## Foot Control III

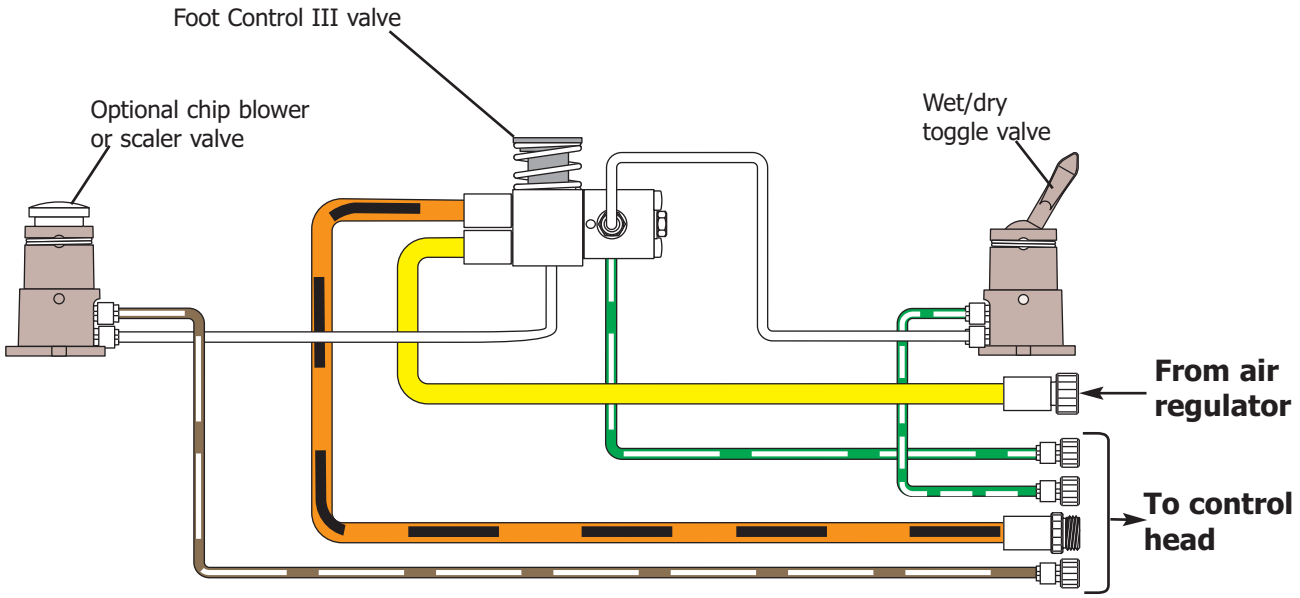
Use of Foot Control III began in March 1999. A service kit, P/N 90.0593.00, and an international conversion kit, P/N 38.1764.00, are available for Foot Control III.




**Foot Control III Valve Assembly**




**Foot Control III Cross View**



## Troubleshooting Foot Controls

Tips and troubleshooting information are listed in the following charts to assist in diagnosing foot control problems. These charts do not cover every situation, but do try to include the most common problems you may encounter. In most cases, it is recommended rebuilding the whole foot control using the appropriate service kit. This normally solves the problem and saves time.

| Problem | Action |
|---|---|
| Audible leakage when foot control is **not** being used | Do these steps in the order listed, until the leakage has stopped.<br><br>**Task** **Descriptions**<br><br>1 Check mounting screws in the bottom of the baseplate to make sure they are tight.<br>• If leakage has stopped, test unit.<br>• If there is still audible leakage, continue with step 2.<br><br>2 Remove the cover and check the internal tubings for secure connections.<br><br>3 Check for leakage from the exhaust holes on the signal relay valve. If there is leakage, do the following<br>• move the master On/Off toggle to the OFF position and bleed the system of air pressure<br>• inspect the stem and o-rings for debris or defects, and<br>• inspect the seat for debris or defects.<br><br>4 Replace any defective parts. Lubricate the o-rings, reassemble and test the foot control.<br><br>5 Check for leakage around the diaphragm. If there is leakage, do the following:<br>• Tighten the two screws securing the signal relay valve to the foot control valve. If there's still leakage, replace the diaphragm. |

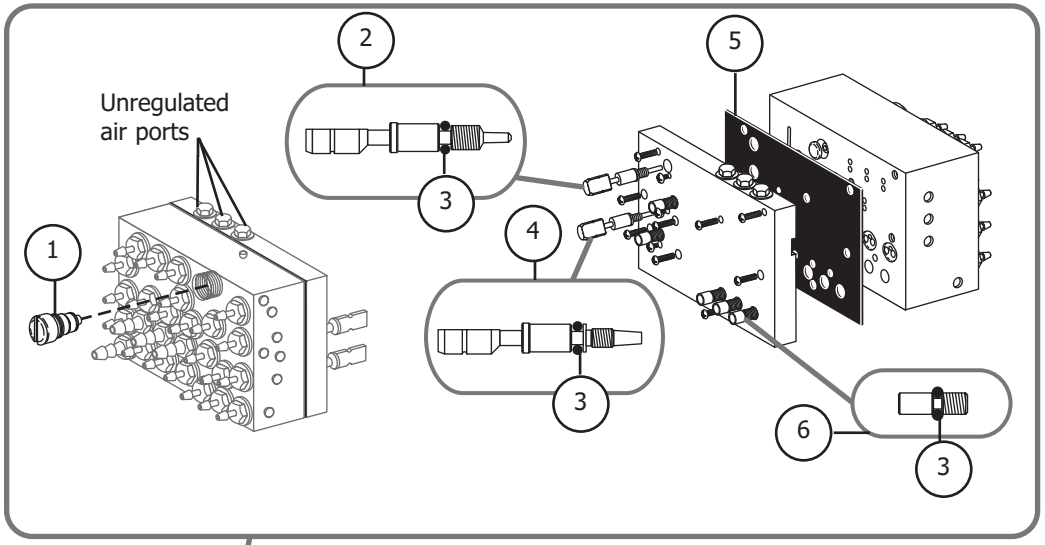
| Problem | Action |
|---|---|
| Audible leakage when foot control is in use | Complete the following steps in this chart to stop leakage.<br><br>**Task** **Descriptions**<br><br>1 Check for a failed diaphragm.<br>• Tighten the two screws securing the signal relay valve to the foot control valve. If there's still leakage, replace the diaphragm.<br>• If there is still audible leakage, continue with step 2.<br><br>2 Check for leakage from the exhaust holes on the signal relay valve. If there is leakage, do the following:<br>• move the master On/Off toggle to the OFF position and bleed the system of air pressure<br>• inspect the stem and o-rings for debris or defects, and<br>• inspect the seat for debris or defects.<br><br>3 Replace any defective parts. Lubricate the o-rings, reassemble and test the foot control.<br><br>4 Check the outlet barb and tubing on the signal relay valve. Tighten the barb, or replace the tubing. |

| Problem | Action |
|---|---|
| Inadequate air flow | Check these in the following order.<br><br>**Task** **Descriptions**<br><br>1 Check the air pressure. If the air pressure drops by more than 15 psi when syringe air button and foot control are depressed<br>• Check for pinched foot control tubing.<br>• Check for a plugged filter in the air filter/regulator (floor box).<br>• Check for obstructed outlet barb on signal relay valve.<br><br>2 Move the master On/Off toggle to the OFF position and bleed the system of air pressure.<br><br>3 Remove debris and replace any defective parts in the valve assembly. Lubricate the o-rings, reassemble, and test the foot control. |
| Coolant water continues after release of foot control | Check these in the following order.<br><br>1 Check for a sticky signal relay valve.<br><br>2 Move the master On/Off toggle to the OFF position and bleed the system of air pressure.<br><br>3 Remove the signal relay valve, clean and lube the parts, and reassemble.<br><br>4 Test foot control.<br><br>5 Check for a kinked/plugged tubing somewhere between the foot control relay and the control head. |

| Problem | Action |
| --- | --- |
| Sluggish foot control | Check the following points to test the response on the foot control.<br>• Move the master On/Off toggle to the OFF position and bleed the system of air pressure.<br>• Remove the signal relay valve, clean and lube the parts, and reassemble.<br>• Test foot control. |

## Control Block Assembly With Tubing

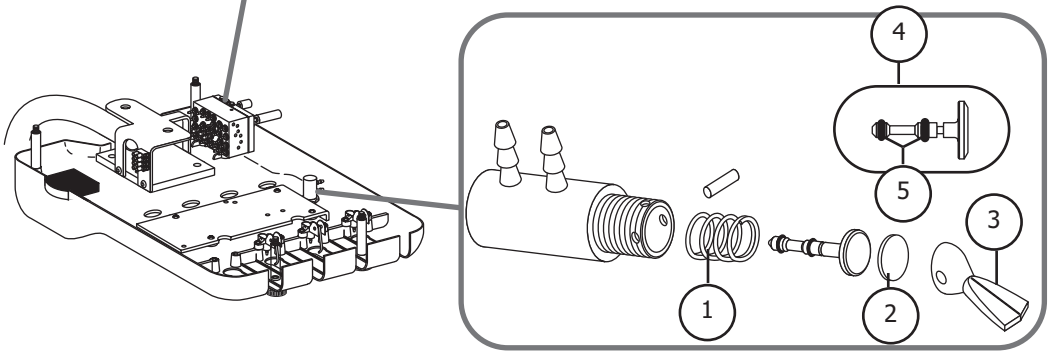
| Item # | Part Number | Description |
|---|---|---|
| | 38.1775.00 | *Performer control block service kit |
| *1 | 38.0717.00 | Water relay valve assembly |
| 2 | 38.0712.00 | Coolant water stem with o-ring |
| 3 | 030.004.02 | O-ring pkg 10 |
| 4 | 38.0713.00 | Coolant air stem with o-ring |
| *5 | 38.0711.01 | Control block diaphragm pkg 5 |
| 6 | 38.0766.02 | Flow control screw with o-ring pkg 5 |




**38.0729.00**

## Handpiece Flush Toggle Valve, 2-Way Momentary

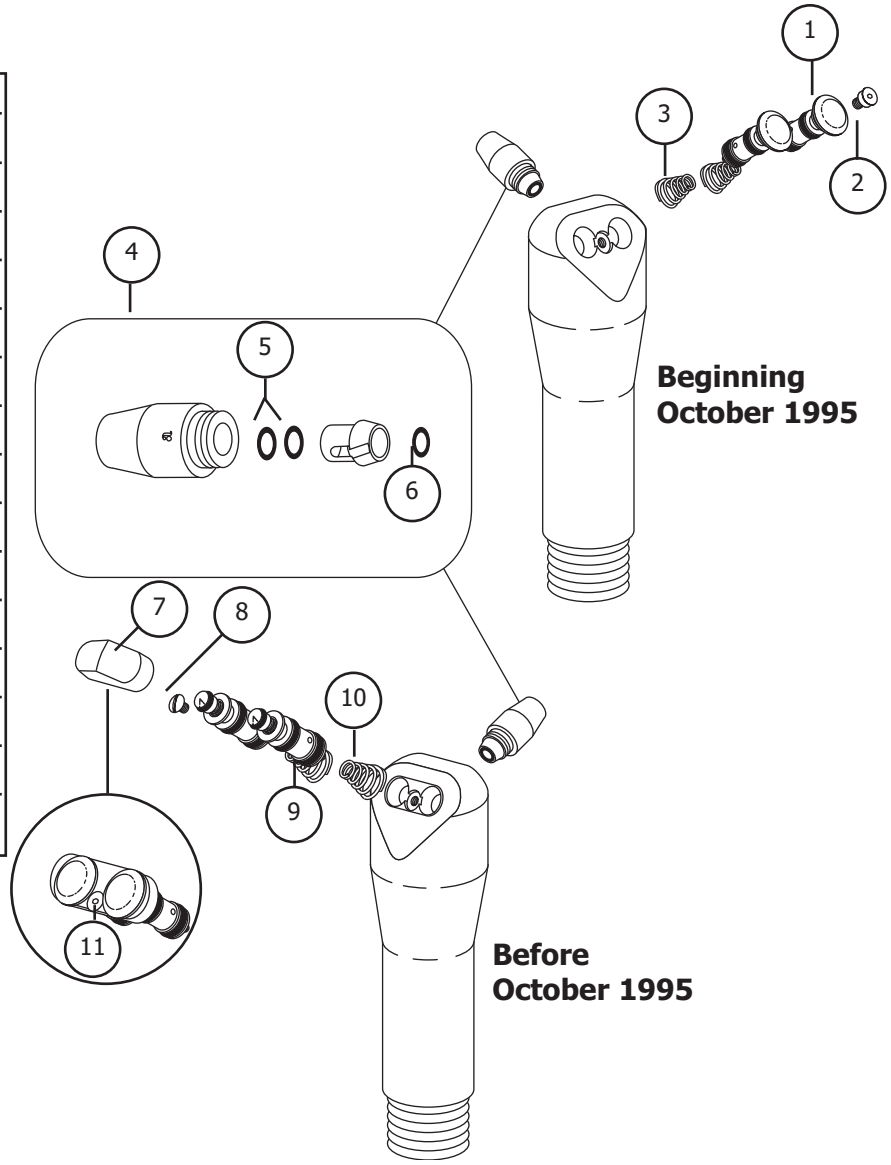
| Item # | Part Number | Description |
|---|---|---|
| 1 | 013.055.00 | Spring, compression |
| 2 | 33.0007.00 | Disk |
| 3 | 33.0037.01 | Straight pin and toggle lever, momentary |
| 4 | 29.0830.00 | Stem with o-ring, 2-way |
| 5 | 030.001.02 | O-rings pkg 10 |




**33.0009.03**

## Autoclavable Syringe

| Item # | Part Number | Description |
|---|---|---|
| | 23.1011.00 | Autoclavable syringe head assembly |
| | 23.1150.00 | Autoclavable syringe assembly and 7' tubing |
| | 23.1099.00 | Autoclavable syringe service kit, 2 button |
| | 23.1012.00 | Autoclavable syringe service kit, soft button |
| 1 | 23.1232.01 | Valve assembly with o-rings, autoclavable |
| 2 | 23.1193.01 | Screw pkg 5 |
| 3 | 013.064.01 | Spring pkg 10 |
| 4 | 23.1112.00 | Syringe tip retainer, non-locking |
| 5 | 035.048.01 | O-ring pkg 10 |
| 6 | 034.003.01 | O-ring pkg 10 |
| 7 | 23.1028.00 | Soft button, autoclavable |
| 8 | 001.002.01 | Screw pkg 5 |
| 9 | 23.1021.01 | Valve assembly with o-rings pkg 2 |
| 10 | 013.064.01 | Spring pkg 10 |
| 11 | 23.1194.00 | Two-button valve conversion kit |



## Troubleshooting the Control Block

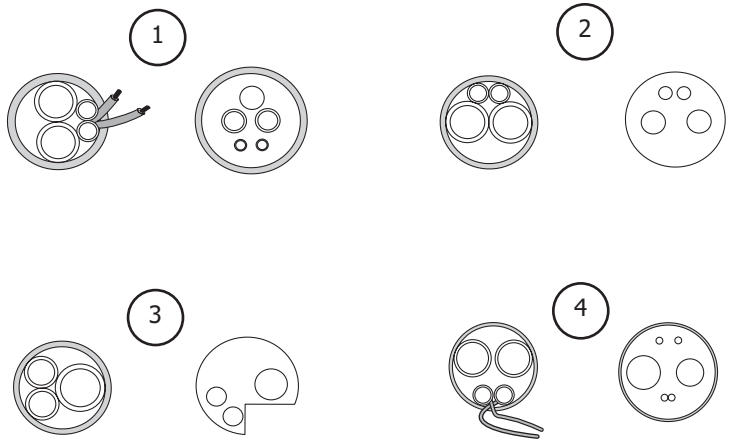
Tips and troubleshooting information are listed to assist in distinguishing control block problems.

| Problem | Action |
|---|---|
| Water leakage at the coolant water stem | Follow these points to stop leakage at the coolant water stem.<br>• Replace the o-ring.<br>• Replace the stem. |
| Water leakage at the water relay valve or handpiece | Replace the valve. |
| Audible air leakage at the flow control screws or coolant air stem | Follow these points to stop leakage at the flow control screws or coolant air stem.<br>• Replace the o-ring.<br>• Replace the stem. |
| Water leakage at the control block | Follow these steps to stop leakage at the control block.<br>**Task** **Description**<br>1 Check to make sure control block assembly screws are tight.<br>2 Check to make sure all barbs are tight and the washers are not damaged.<br>3 Replace the diaphragm.<br>4 Replace the stem o-rings. |
| Water leakage at the flow control screw | Follow these steps to stop leakage at the flow control screw.<br>1 Replace water relay.<br>2 Replace the o-ring.<br>3 Replace the stem. |

| Problem | Action |
|---|---|
| Water leakage from all handpieces when removed from holder | Follow these steps to stop leakage from handpieces.<br>**Task** **Description**<br>1 Replace the water relay valve.<br>2 Replace the stem.<br>3 Replace the o-rings on the stem. |
| Water leakage around flush toggle valve barbs | Replace the toggle valve. |
| No water from flush toggle valve outlet barb | Follow these steps to flush the toggle valve outlet barb.<br>1 Check the water supply in the self-contained water bottle.<br>2 Make sure air pressure at the bottle is 40 psi.<br>3 Replace the toggle valve.<br>**WARNING**<br>Turn the master On/Off toggle to the OFF position and bleed system air pressure before removing the foot control disc to prevent the foot control stem from being forcefully ejected. |

## Handpiece Tubing Assembly

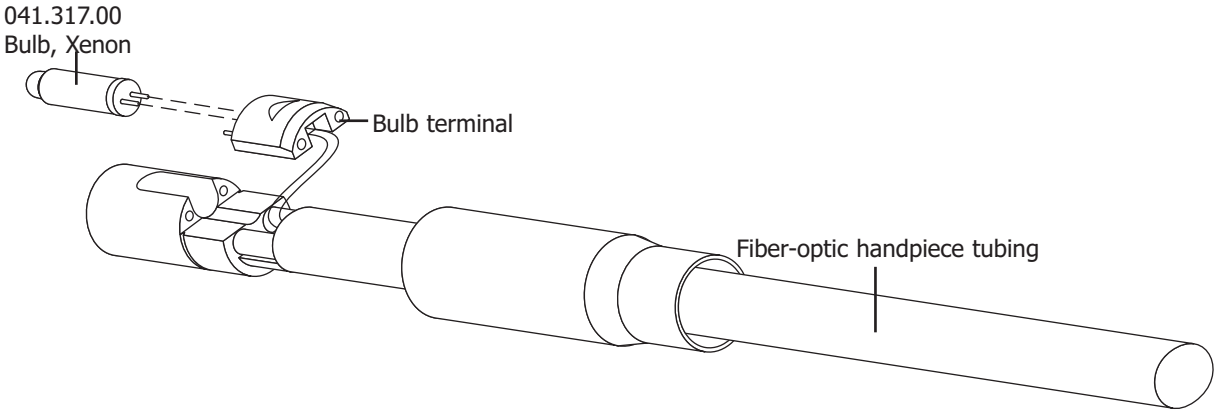
| Item # | Part Number | Description |
|---|---|---|
| 1 | 98.0262.02 | Straight 4-hole fiber-optic tubing with bulb, 7' (2134 mm) |
| 2 | 98.0879.00 | Straight 4-hole tubing with Midwest terminal, 7' (2134 mm) |
| 3 | 98.0882.00 | Straight 3-hole tubing with Borden terminal, 7' (2134 mm) |
| 4 | 98.0885.00 | Straight 4-hole, fiber-optic tubing, six pin, 7' (2134mm) |




**CAUTION**

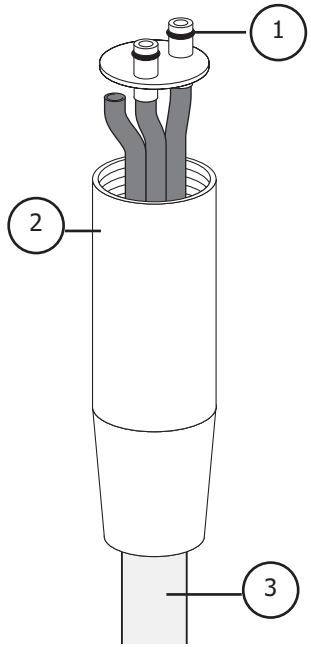
Do not touch the glass of the bulb. Finger oils limit bulb life. If you inadvertently touch the glass, gently clean with cotton soaked in ethyl or isopropyl alcohol.

## Fiber-Optic Bulb



## Syringe Terminal, 2 Barb, Non-Quick Disconnect

| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.002.02 | O-ring pkg 10 |
| 2 | 23.1015.00 | Handle |
| 3 | 024.155.02 | Syringe tubing assembly, straight 7' |




**23.1208.00**

## Troubleshooting Syringes

Tips and troubleshooting information are listed to assist in distinguishing syringe problems.

| Problem | Action |
|---|---|
| Air or water leakage from one of the valve assemblies | Replace the valve assemblies. |
| Air or water leakage from the syringe nut assembly | Check the following steps to stop leakage from the syringe nut assembly.<br>**Task** **Description**<br>1 Make sure the syringe nut assembly is properly installed and tightened. Use a 5/32" hex key to tighten.<br>2 Replace o-rings.<br>3 Replace the syringe nut assembly. |
| No air and/or water from the syringe | Check the following steps to fix the syringe.<br>1 Check to make sure the master On/Off toggle is in the ON position.<br>2 Check to make sure the air and water supplies are turned ON.<br>3 Check tubing for kinks or breaks. |

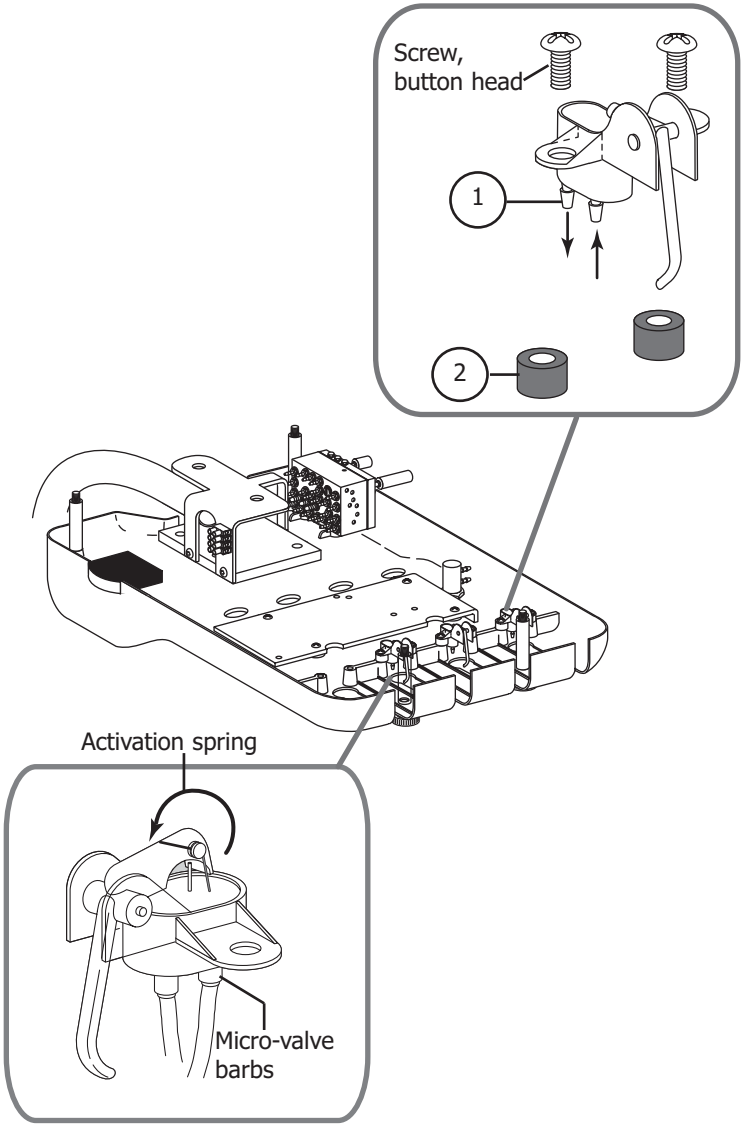
## Working with the Holder Valve Assembly

| Item # | Part Number | Description |
|---|---|---|
| 1 | 99.0627.00 | Micro-valve assembly with tubing |
| 2 | 004.186.00 | Washer |

### Holder Valve Activation, Third Handpiece Position

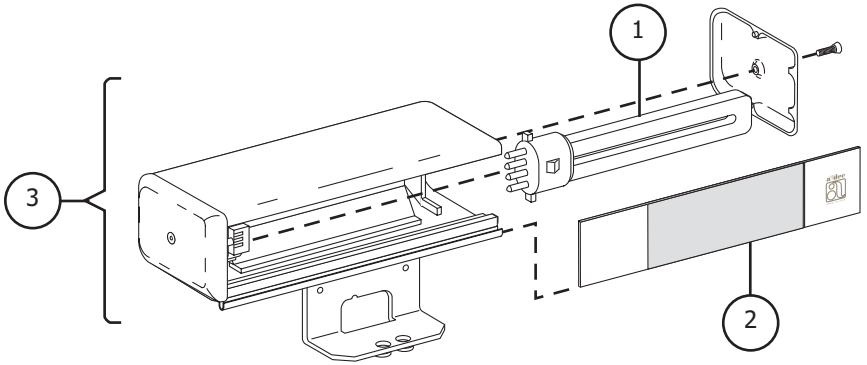
Follow these points to activate the third holder position

- Rotate the activation spring counterclockwise.
- Align the spring so it is parallel to the micro-valve barbs (straight down).



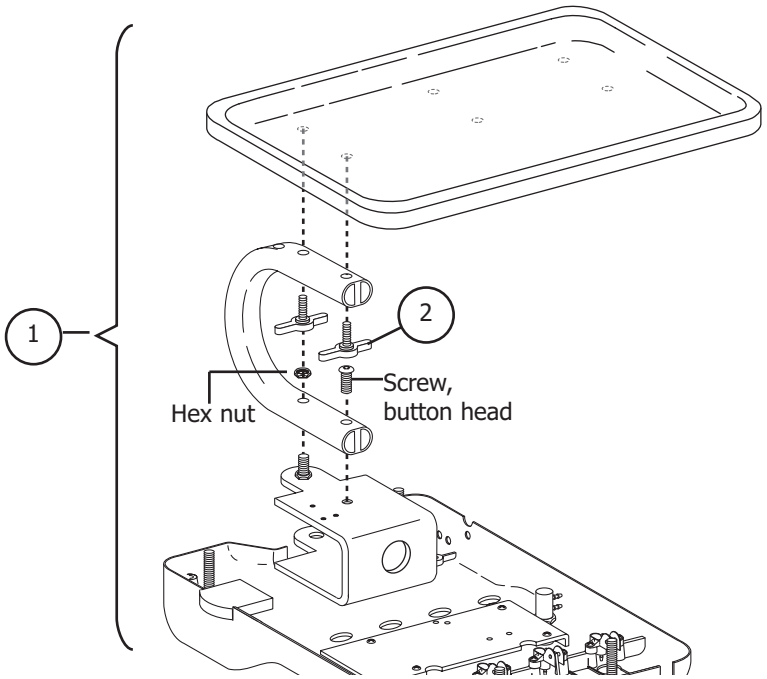
## Bitewing Viewer

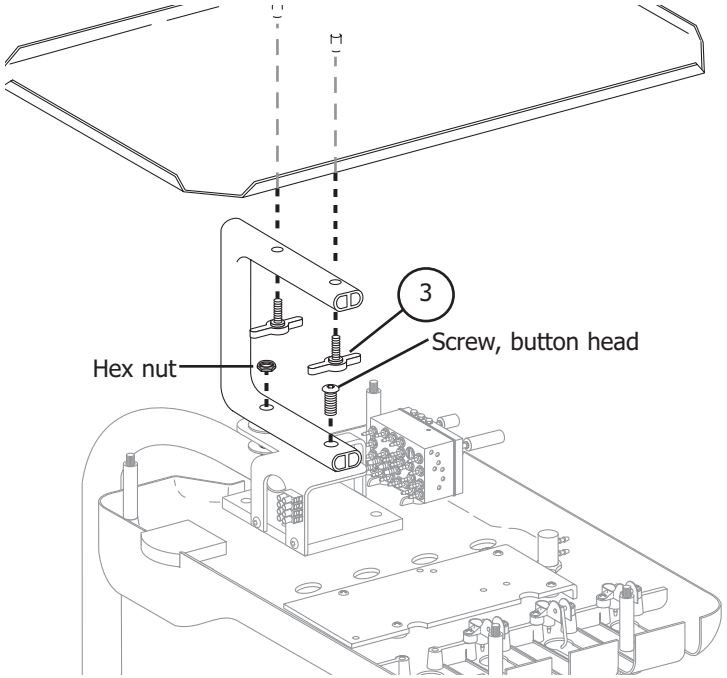
| Item # | Part Number | Description |
|---|---|---|
| 1 | 041.501.00 | Fluorescent bulb<br>4100K 9W |
| 2 | 76.8001.00 | Lens, bitewing viewer |
| 3 | 76.8100.00 | Bitewing viewer, 24 VAC, .5A, 50-60Hz |



## Tray Holder

| Item # | Part Number | Description |
|---|---|---|
| 1 | 39.1380.00 | Molded tray holder |
| 2 | 027.070.00 | Knob assembly |
| 3 | 027.062.00 | Knob assembly |

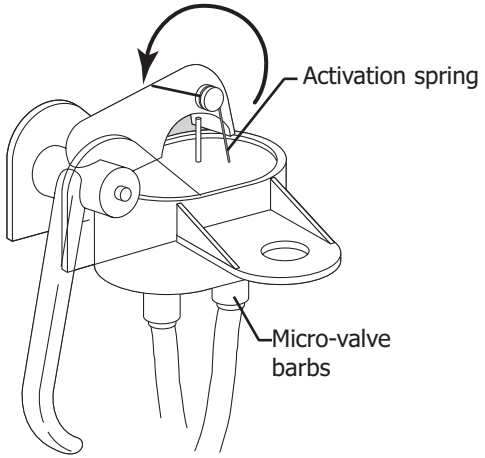


## Activating the Holder Valve

The third handpiece position can be changed from inactive to active by performing a simple adjustment.

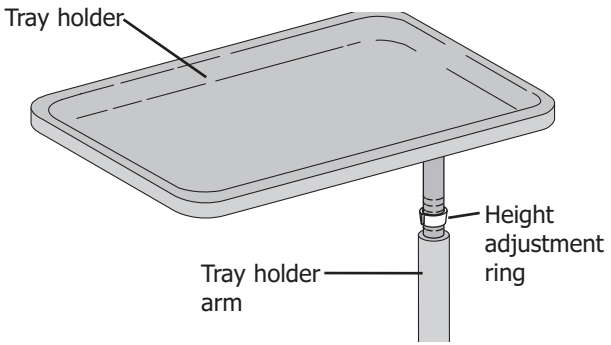
| Step | Action |
|---|---|
| 1 | Rotate the activation spring clockwise |
| 2 | Align the spring so it is parallel to the micro-valve barbs (straight down) |




**Holder Valve Activation**

## Adjusting the Accessory Tray Holder Height

Lift the tray holder to access the height adjustment ring. Slide the height adjustment ring to the desired position. Lower the tray holder onto the arm.

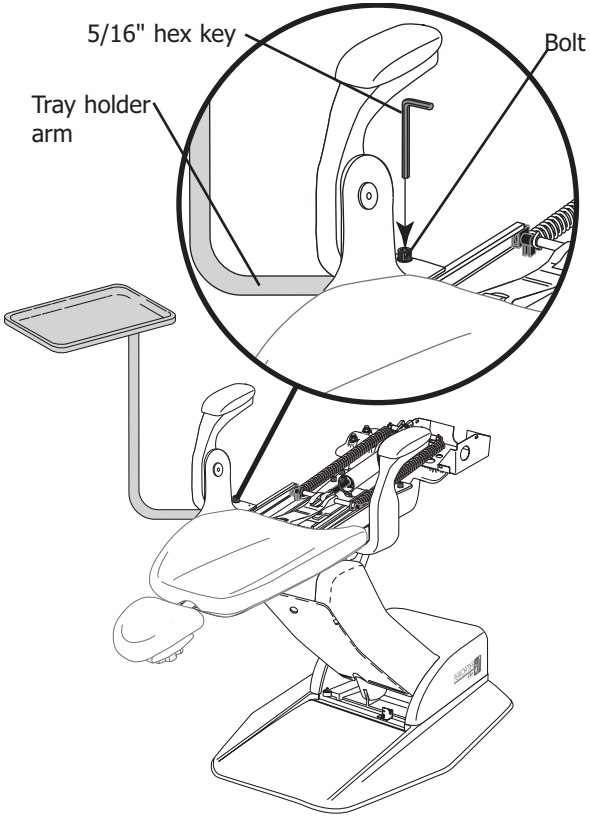



## Adjusting the Accessory Tray Holder Arm Tension

Remove the chair seat/toeboard upholstery. Locate the tray holder arm mounting bolt. Turn the bolt until the desired tension is achieved.

- Clockwise to tighten
- Counterclockwise to loosen

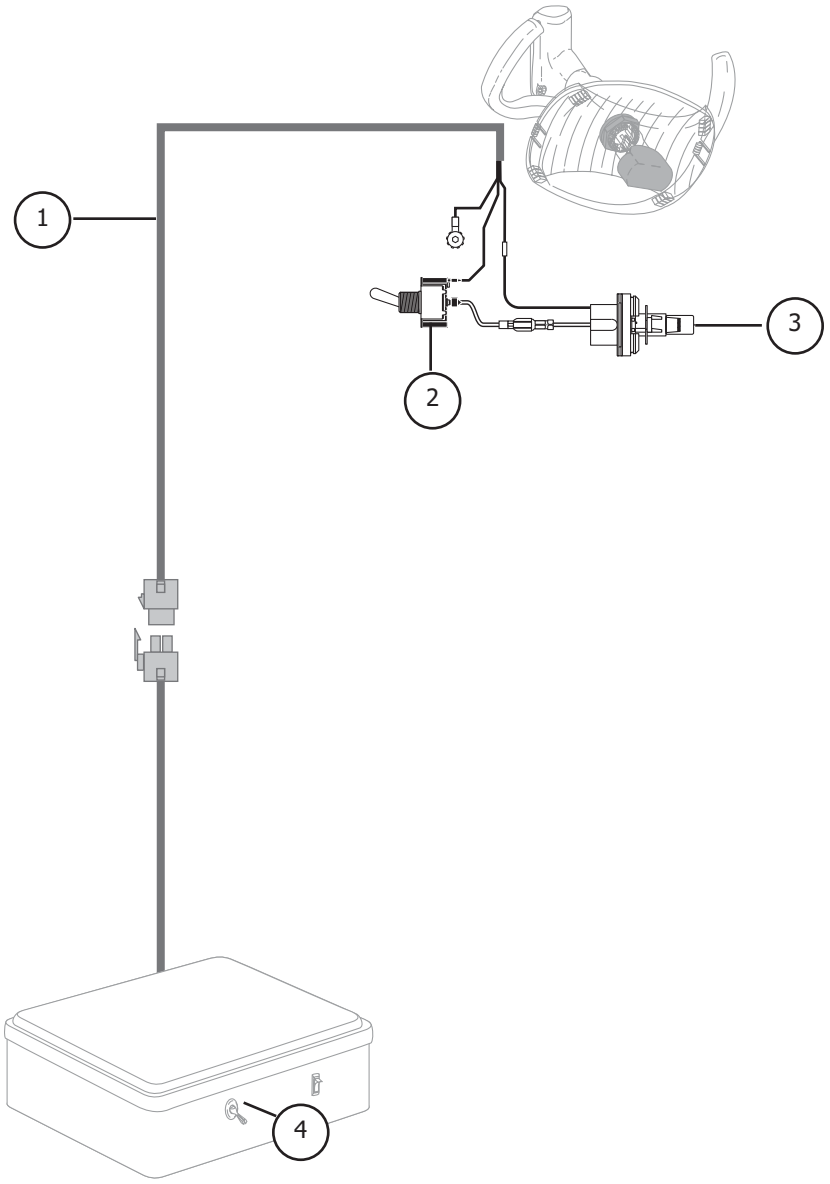
Reinstall the chair seat /toeboard upholstery.



## Dental Light

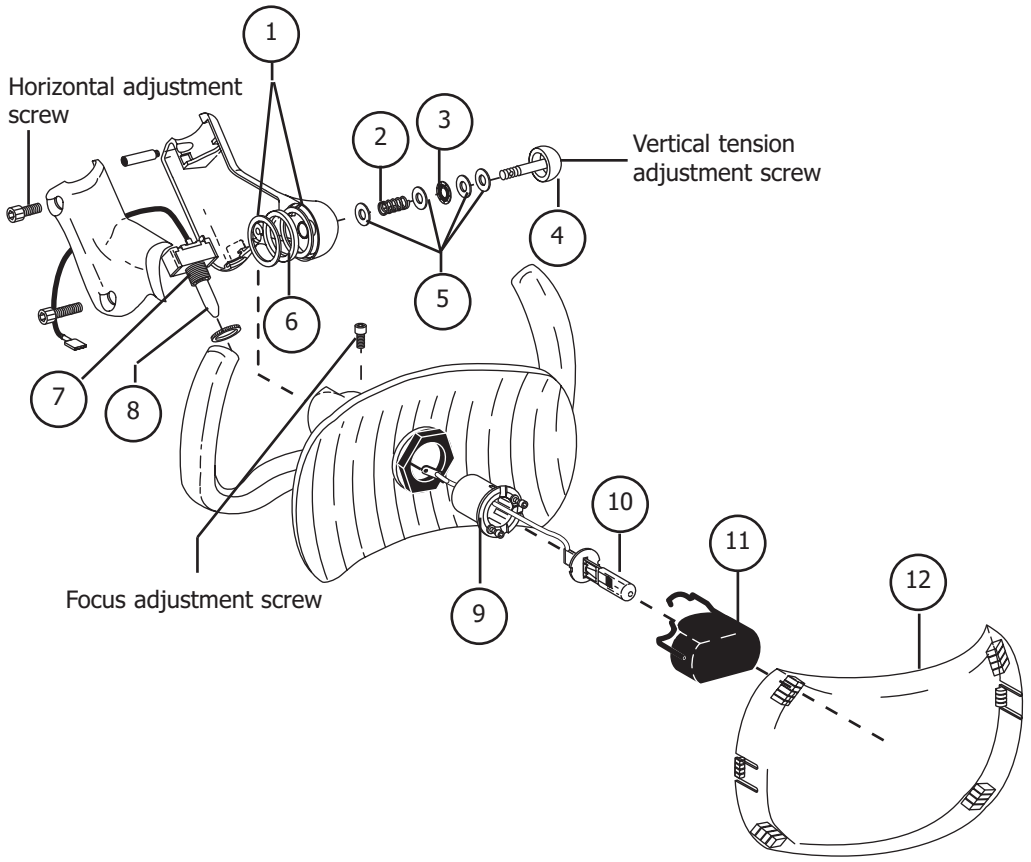
| Item # | Part Number | Description |
|---|---|---|
| 1 | 90.1054.00 | Cable assembly |
| 2 | 90.1039.00 | Toggle switch kit |
| 3 | 041.513.00 | 12 volt, 55-watt halogen bulb |
| 4 | 90.1045.00 | Kit, Light intensity rocker switch with cable |

**NOTE**: Dental light connections are made in the cuspidor/assistant's housing, the chair junction box, and the floor box. Refer to the appropriate section for all connector locations.



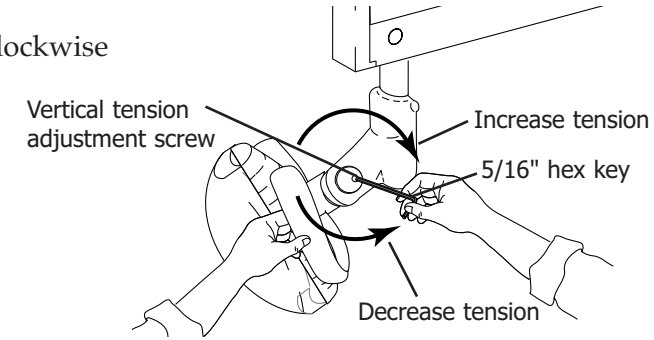
## Dental Light

| Item # | Part Number | Description |
|---|---|---|
| 1 | 004.207.00 | Washer, flat |
| 2 | 013.100.00 | Spring |
| 3 | 016.054.00 | Bearing, thrust |
| 4 | 28.1172.00 | Compression bolt |
| 5 | 016.053.00 | Washer, thrust |
| 6 | 28.1175.01 | Washer, thrust |
| 7 | 90.1039.00 | Toggle switch kit |
| 8 | 28.1188.00 | Handle, On/Off switch |
| 9 | 28.1289.00 | Bulb socket and insulation |
| 10 | 041.513.00 | 12 volt, 55-watt halogen bulb |
| 11 | 28.1213.00 | Bulb cap assembly |
| 12 | 28.1166.00 | Reflector shield |



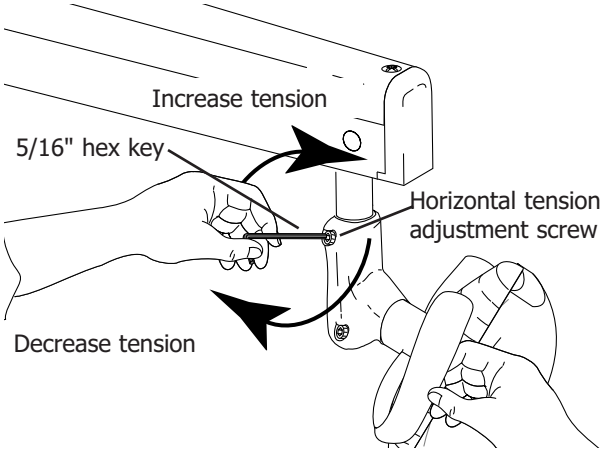
## Adjusting the Light Head Vertical Tension

Turn the vertical tension adjustment screw clockwise to increase tension. Turn counterclockwise to decrease tension.




## Adjusting the Light Head Horizontal Tension

Turn the horizontal tension adjustment screw clockwise to increase tension. Turn counterclockwise to decrease tension.

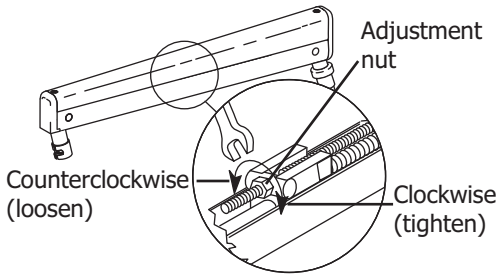



## Focusing the Light

Loosen the focus adjustment screw. Move the bulb socket in or out of the reflector housing until the light is focused. Tighten the focus adjustment to fully secure the bulb socket.

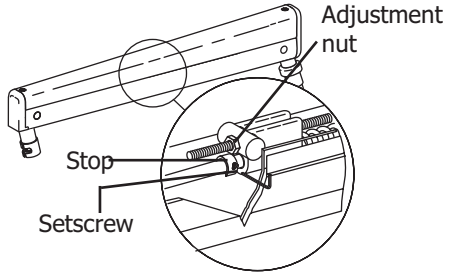
## Adjusting the Flexarm

Remove the screw from the rear end cap, then remove the front end cap and cover from the arm. Using a 1/2" open end wrench, turn the tension adjustment nut inside the arm. If the arm moves too easily, it tends to drift up or down by itself, tighten the nut by turning it clockwise. If the arm tension is too stiff, loosen the nut by turning it counterclockwise.



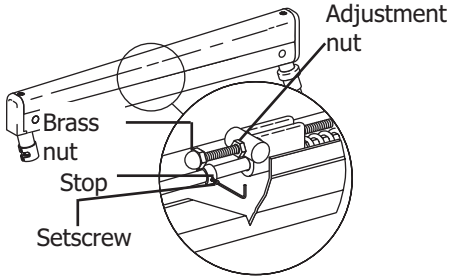

### Adjusting the Flexarm Travel (Limit Up)

The upward motion of the flexarm can be adjusted by adding a Travel Stop Limit Kit (P/N 90.1044.00). To order this kit contact A-dec customer service at 1-800-547-1883.




### Adjusting the Flexarm Travel (Limit Down)

The downward motion of the flexarm can be adjusted by adding a Travel Stop Limit Kit (P/N 90.1044.00). To order this kit contact A-dec customer service at 1-800-547-1883.



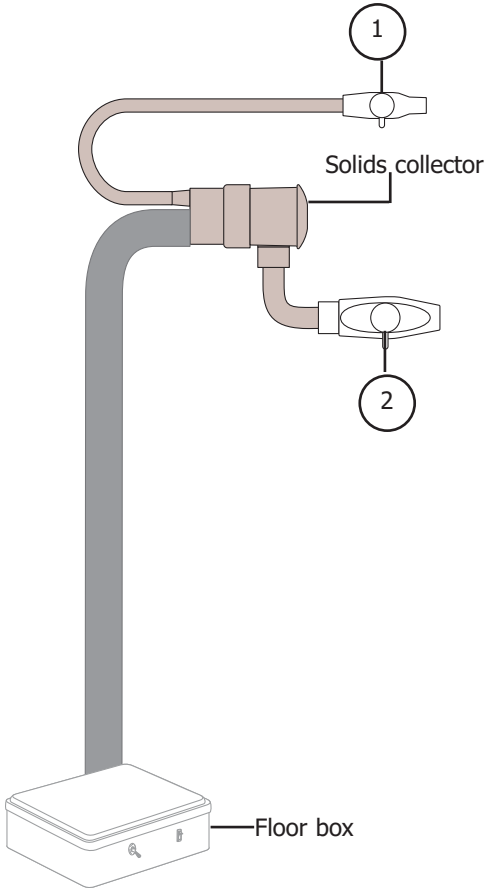
## Troubleshooting Dental Lights

Tips and troubleshooting information are listed to assist in distinguishing dental light problems.

| Problem | Action |
|---|---|
| No light | Follow these steps to fix the dental light.<br>**Task** **Description**<br>1 Make sure the system is plugged in and turned ON.<br>2 Check the 80-watt power supply for power.<br>3 Check the bulb, replace if necessary.<br>4 Check all the light wire harness connections.<br>5 Check voltage intensity and On/Off switches.<br>6 Check the voltage at the bulb. |
| Dim light | Follow these steps to fix the dental light.<br>1 Check cleanliness of bulb, shield, and reflector.<br>2 Check the bulb, replace if necessary.<br>3 Check intensity switch voltages.<br>4 Check 80-watt power supply output voltage. |

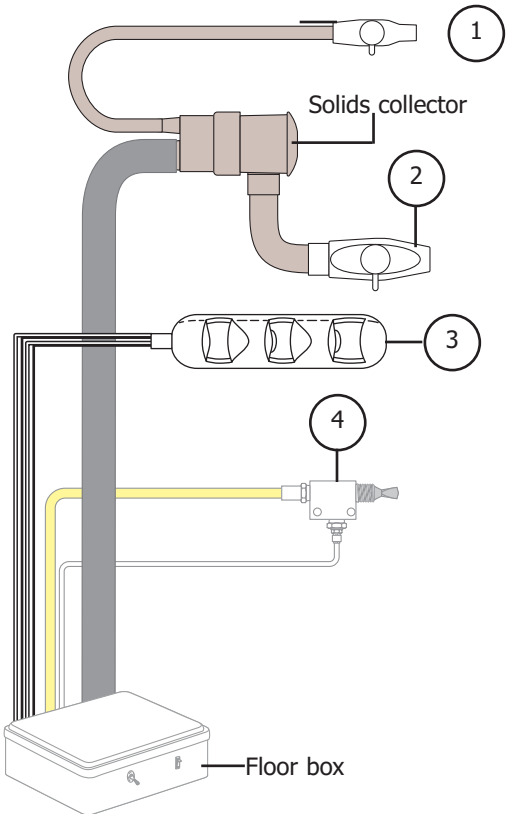
## Cuspidor for Central Vacuum

| Item # | Part Number | Description |
|---|---|---|
| 1 | 12.0910.06 | Autoclavable saliva ejector with 7' tubing |
| 2 | 11.1025.02 | Autoclavable HVE with 7' tubing |



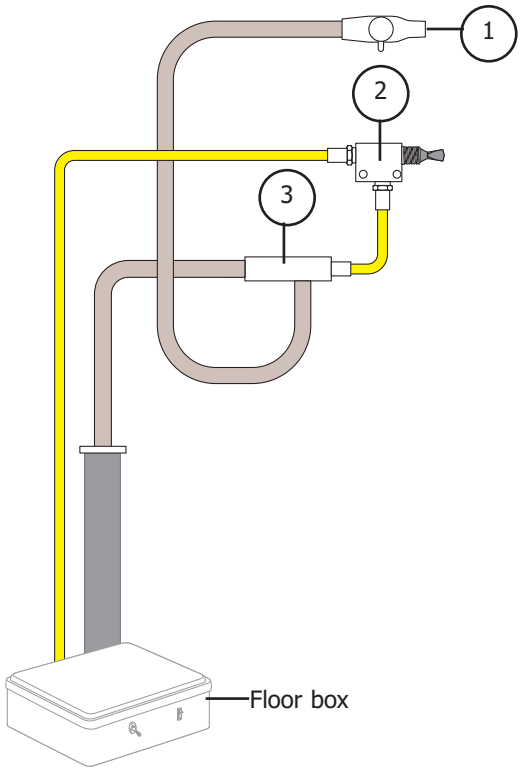

## Cuspidor (Single Operatory Vacuum)

| Item # | Part Number | Description |
|---|---|---|
| 1 | 12.0910.06 | Autoclavable saliva ejector with 7' tubing |
| 2 | 12.1132.00 | Autoclavable HVE with 7' tubing |
| 3 | 12.1122.00 | Auto-electric holder, 3-position (after Nov 1997) |
| 4 | 12.1071.00 | 3-way valve assembly (before Nov 1997) |



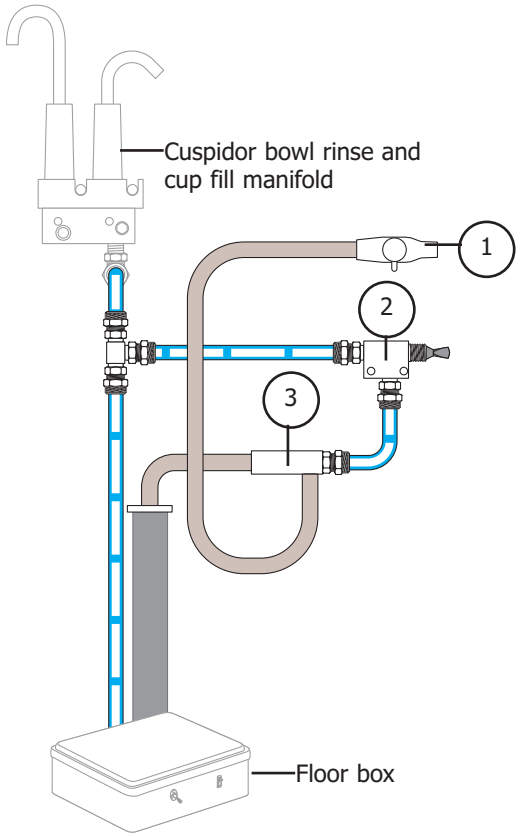
## Cuspidor with Air Saliva Ejector

| Item # | Part Number | Description |
|---|---|---|
| 1 | 12.0910.06 | Autoclavable saliva ejector with 7' tubing |
| 2 | 12..1070.00 | 2-way valve assembly |
| 3 | 11.1105.00 | Air saliva ejector |



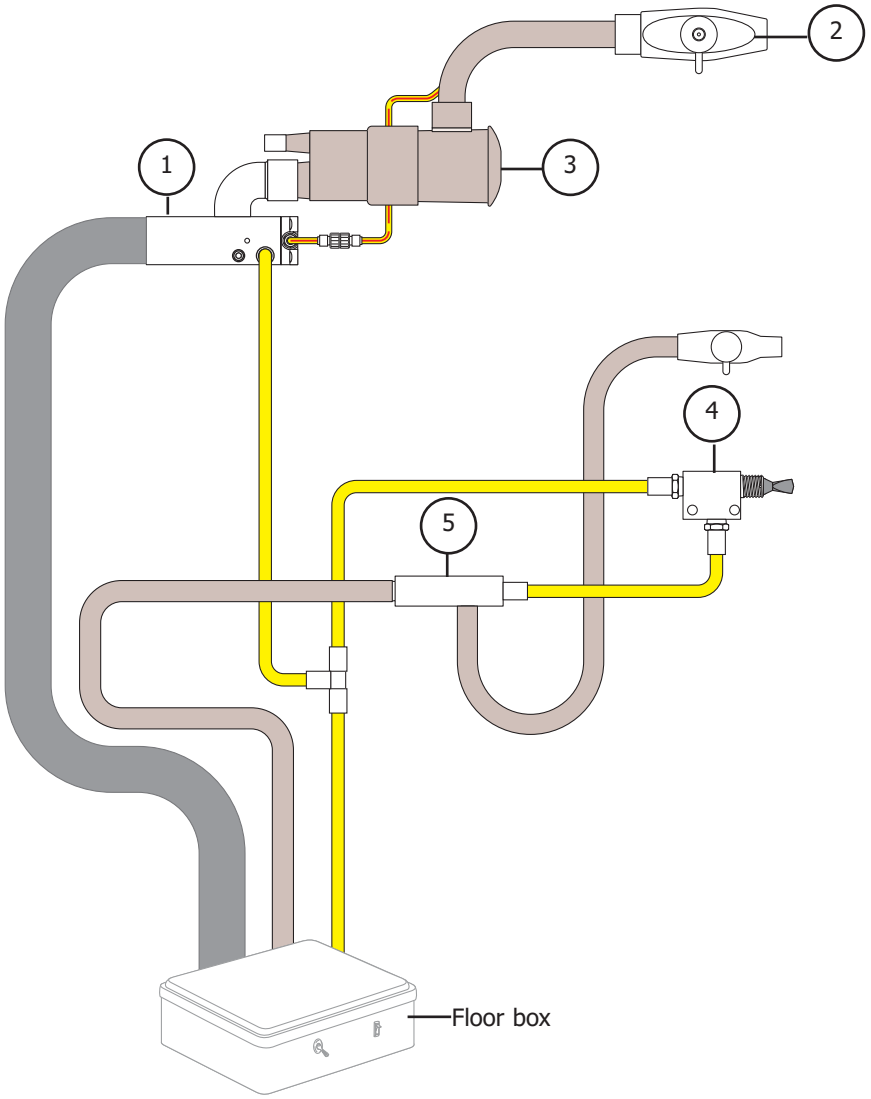

## Cuspidor with Water Saliva Ejector

| Item # | Part Number | Description |
|---|---|---|
| 1 | 12.0910.06 | Autoclavable saliva ejector with 7' tubing |
| 2 | 12..1073.00 | 2-way valve assembly |
| 3 | 12.0500.00 | Water saliva ejector |



## Cuspidor with Air Saliva Ejector, Air Vacuum Generator and AVS

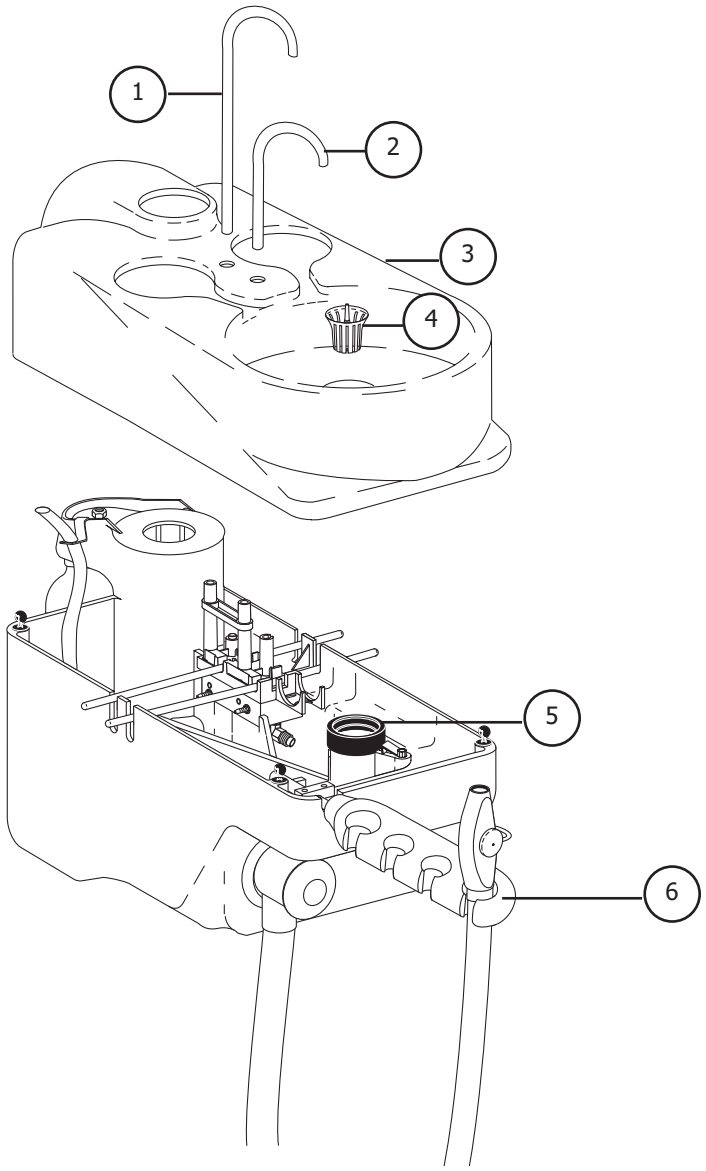
| Item # | Part Number | Description |
|---|---|---|
| 1 | 11.1100.00 | Air vacuum generator |
| 2 | 11.1127.01 | Performer AVS with 7' tubing |
| 3 | 12.0910.06 | Autoclavable saliva ejector with 7' tubing |
| 4 | 12.1070.00 | 2-way valve assembly |
| 5 | 11.1105.00 | Air saliva ejector |



## Performer Cuspidor Assembly

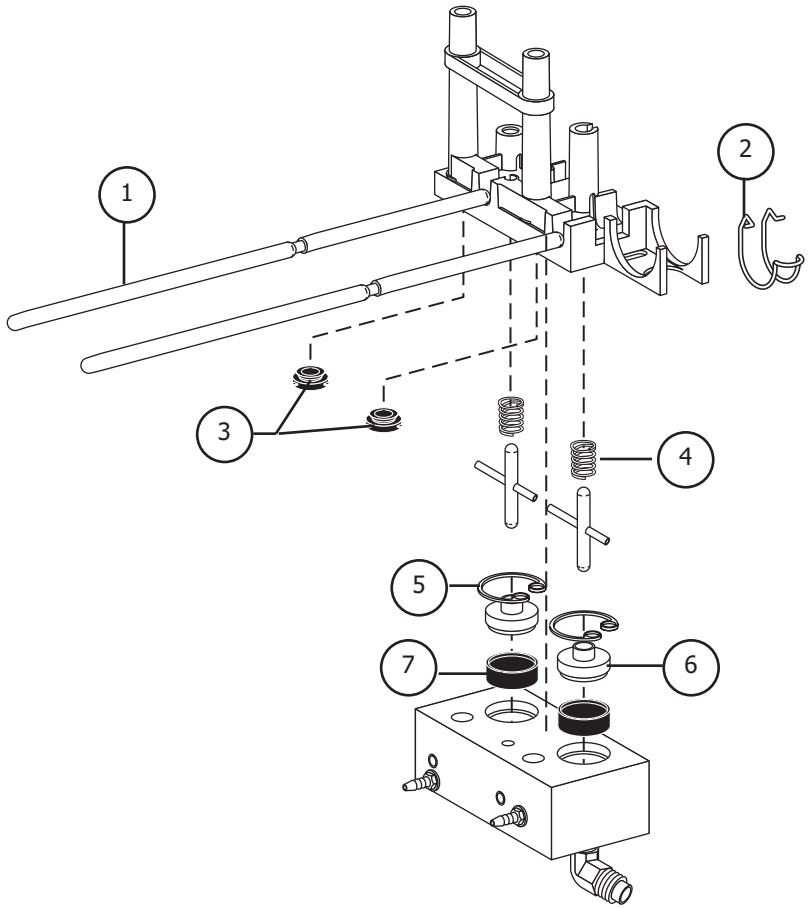
| Item # | Part Number | Description |
|---|---|---|
| 1 | 12.0985.00 | Cup fill spout |
| 2 | 12.0986.00 | Bowl rinse spout |
| 3 | 76.2011.00 | Cuspidor/bowl assembly |
| 4 | 75.0035.01 | Bowl screen pkg 5 |
| 5 | 12.0991.00 | Drain seal |
| 6 | 12.1020.00<br>12.1056.00<br>99.0584.00<br>12.1207.00<br>12.1210.00 | Holder, 3-position, fixed<br>Holder, 4-position, fixed<br>Holder, single, assistant's, fixed<br>Holder, 4-position, rotating<br>Holder, 3-position, rotating |

**NOTE**: The spout(s) is not fully seated in the housing. Make sure the spout is fully installed.



## Cuspidor Bowl Rinse and Cup Fill Manifold

| Item # | Part Number | Description |
|---|---|---|
| 1 | 12.0977.01 | Activator rod pkg 2 |
| 2 | 12.1016.00 | Clip |
| 3 | 12.0988.00 | Water spout seal |
| 4 | 013.004.00 | Spring |
| 5 | 010.045.02 | Retaining ring, internal pkg 10 |
| 6 | 12.0983.00 | Diaphragm retainer |
| 7 | 12.0982.01 | Diaphragm, water manifold |



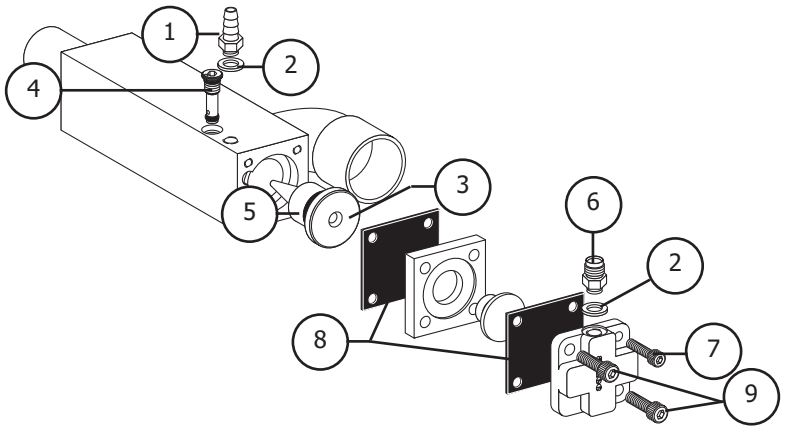
## Troubleshooting Cuspidors

Tips and troubleshooting information are listed to assist in distinguishing cuspidor problems.

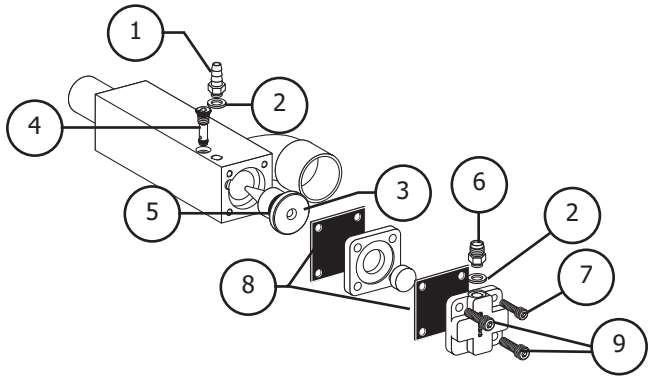
| Problem | Action |
|---|---|
| Spout(s) eject from cuspidor housing | The spout(s) is not fully seated. Make sure the spout is fully installed and test again. |
| Cup fill or bowl rinse run continuously | Follow these points to stop the cup fill or bowl rinse from continuously running.<br>• Replace the activator rod, if bent.<br>• Replace the spring. |
| Water leaks from the spout tips or from the cuspidor housing | Follow these points to stop leakage from the spout tips or cuspidor housing.<br>• Replace the diaphragm(s).<br>• Replace the spring(s). |
| Water seeps around the spouts | Follow these points to stop leakage from the spout.<br>• Check the spouts to make sure they are fully seated.<br>• Replace the water spout seals. |
| No water | Follow these steps to correct a no water problem.<br>**Task** **Description**<br>1 Make sure the water shutoff valve is fully turned ON.<br>2 Check supply lines and pinch valves.<br>3 Check for plugged passages. |

## Air Vacuum Generator

| Item # | Part Number | Description |
|---|---|---|
| 1 | 023.001.03 | Barb, 1/4 " pkg 10 |
| 2 | 004.005.02 | Washer pkg 10 |
| 3 | 11.1085.00 | Jet |
| 4 | 38.0517.00 | Air bleed cartridge without o-ring |
| 5 | 030.012.02 | O-ring pkg 10 |
| 6 | 023.089.00 | Quick disconnect, 1/8" female |
| 7 | 001.021.00 | Screw |
| 8 | 22.0440.02 | Diaphragm pkg 10 |
| 9 | 001.042.00 | Screw |



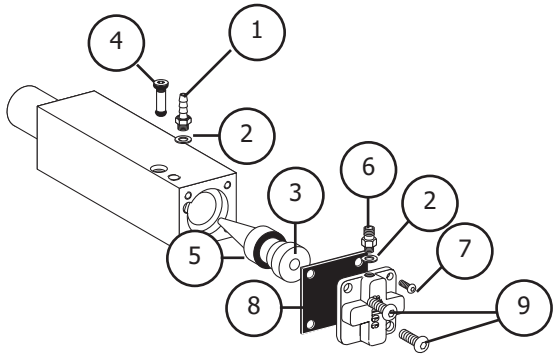

**11.1100.00**
**Used in 76.2310.00 Cuspidors**
**after November 1995**




**11.1100.00**
**Used in 76.2300.00 Cuspidors**
**between August 1995 to November 1995**

## Air Vacuum Generator

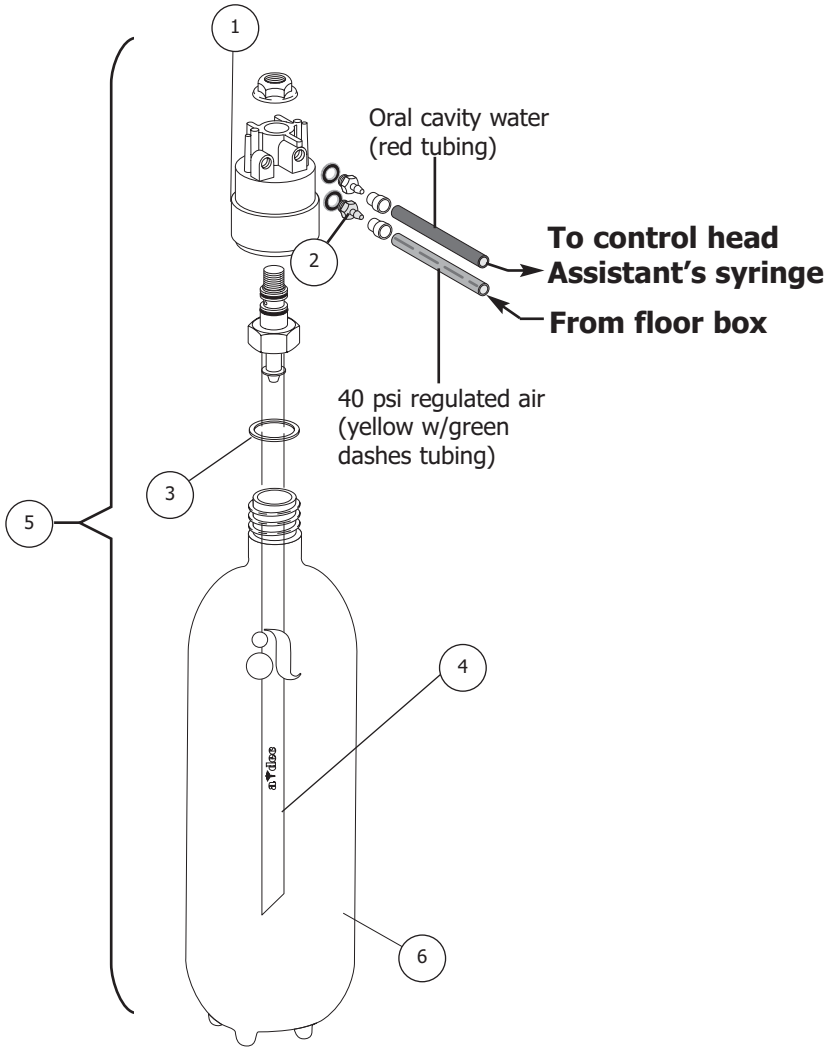
| Item # | Part Number | Description |
|---|---|---|
| 1 | 023.001.03 | Barb, 1/4" pkg 10 |
| 2 | 004.005.02 | Washer pkg 10 |
| 3 | 11.1085.00 | Jet |
| 4 | 38.0517.l00 | Air bleed cartridge without o-ring |
| — | 38.0735.00 | Air bleed cartridge without o-ring |
| 5 | 030.012.02 | O-ring pkg 10 |
| 6 | 023.089.00 | Quick disconnect, 1/8" female |
| 7 | | Screw |
| 8 | 22.0440.02 | Diaphragm pkg 10 |
| 9 | | Screw |




**11.1100.00** **Used in 76.2300.00 Cuspidors between April 1995 to August 1995**

## Self-Contained Water System

| Item # | Part Number | Description |
|---|---|---|
| 1 | 14.0408.00 | Cap assembly replacement |
| 2 | 023.070.00 | Restrictor barb |
| 3 | 004.137.00 | Washer |
| 4 | 14.0332.01 | Pick up tubes, pkg 6 |
| 5 | 14.0416.00 | Self-contained water service kit |
| 6 | 90.0460.00 | Water bottle pkg 2 with caps |




**Self-Contained Water Supply System**

## Troubleshooting Air Vacuum Generator

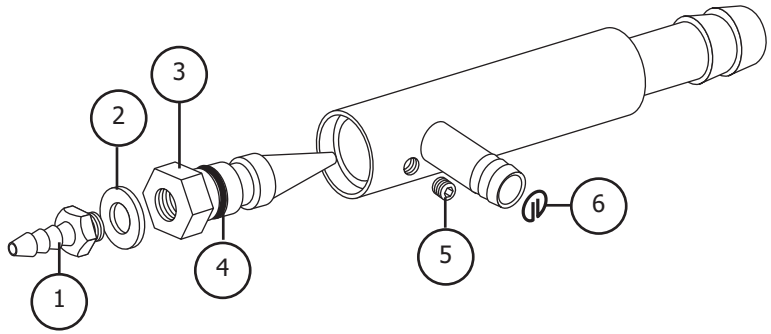
Tips and troubleshooting information are listed to assist in distinguishing air vacuum generator problems.

| Problem | Action |
|---|---|
| Air leakage at the cap | Follow these steps to correct air leakage at the cap.<br>**Task** **Description**<br>1 Replace the diaphragm.<br>2 Replace the jet o-ring.<br>3 Replace the bleed cartridge. |
| Air leakage at the vacuum body | Follow these points to correct air leakage at the vacuum body.<br>• Clean the jet.<br>• Replace the jet. |
| No vacuum | Follow these points when there is no vacuum.<br>• Replace the air bleed cartridge.<br>• Replace the diaphragm. |

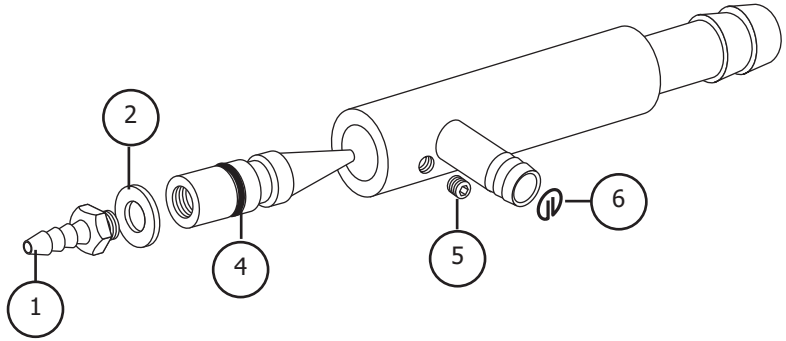
| Problem | Action |
|---|---|
| Vacuum will not shut off | Follow these points when vacuum will not shut off.<br>• Replace the o-ring.<br>• Replace the jet. |
| Air leakage at the jet | Follow these points if there is air leakage at the jet.<br>• Replace the o-ring.<br>• Replace the jet. |

## Air Saliva Ejector

| Item # | Part Number | Description |
|---|---|---|
| 1 | 023.001.03 | Barb, 1/4" pkg 10 |
| 2 | 004.005.02 | Washer pkg 10 |
| 3 | 11.1108.00 | Jet |
| 4 | 030.010.02 | O-ring pkg 10 |
| 5 | 007.002.01 | Setscrew pkg 10 |
| 6 | 11.1111.01 | Screen, spring clip pkg 5 |



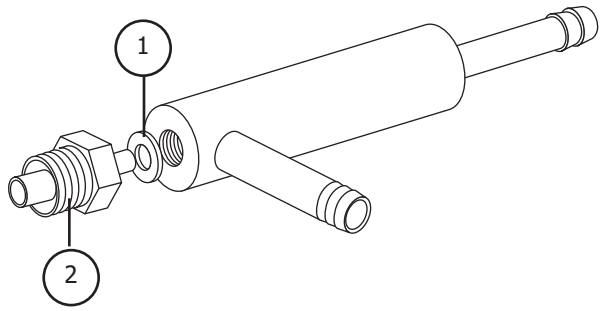

**11.1105.00** **Used in 76.2110.00 and 76.2310.00 Cuspidors after July 1995**




**11.1105.00** **Used in 76.2110.00 and 76.2310.00 Cuspidors before July 1995**

## Water Saliva Ejector

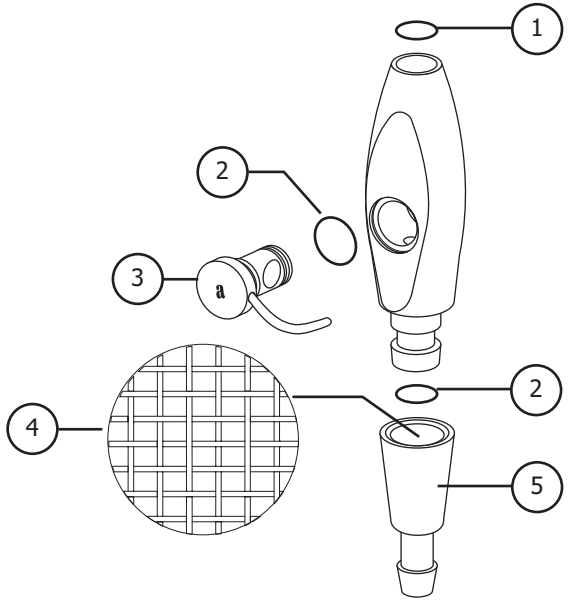
| Item # | Part Number | Description |
|---|---|---|
| 1 | 004.005.02 | Washer pkg 10 |
| 2 | 12.0496.00 | Nozzle, water saliva ejector |




**12.0500.00 Used in 76.2210.00 Cuspidors**

## Autoclavable Saliva Ejector

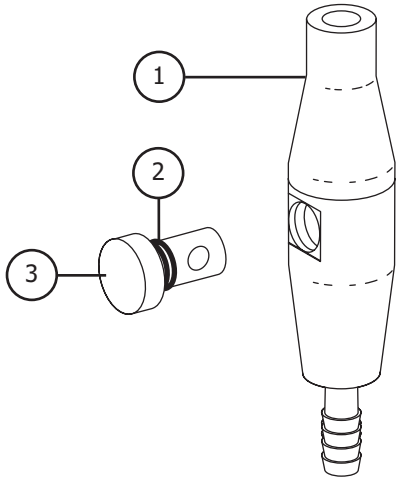
| Item # | Part Number | Description |
|---|---|---|
| 1 | 034.107.01 | O-ring pkg 10 |
| 2 | 034.012.01 | O-ring pkg 10 |
| 3 | 12.1093.00 | Selector valve rotary |
| 4 | 11.1235.01 | Optional screen pkg 10 |
| 5 | 12.1088.00 | Tailpiece |




**12.1100.00**
**12.0910.06 (with 7' Dark Surf Tubing)**

## Non-Autoclavable Saliva Ejector

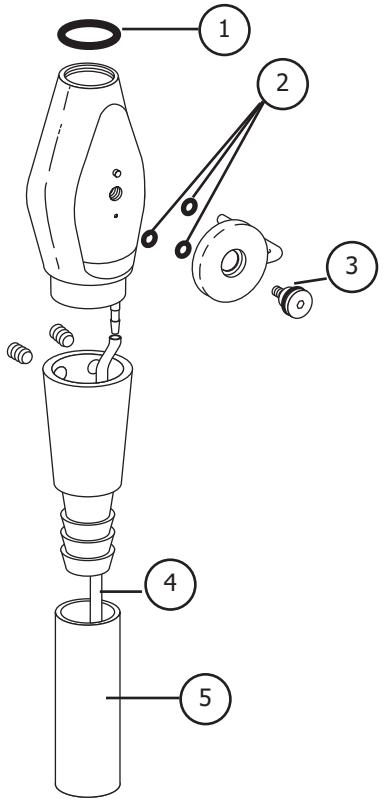
| Item # | Part Number | Description |
|---|---|---|
| 1 | 12.0183.00<br>12.0183.01 | Tip holder, Black<br>Tip holder, Gray |
| 2 | 030.010.02 | O-ring pkg 10 |
| 3 | 12.0182.00 | Rotary Assembly |




**Only Serviceable Parts are Available**

## Non-Autoclavable Saliva Ejector

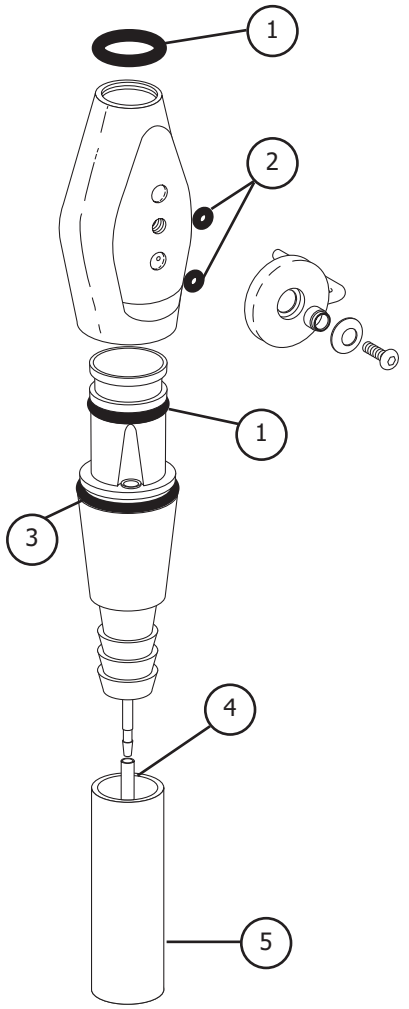
| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.013.02 | O-ring pkg 10 |
| 2 | 030.002.02 | O-ring pkg 10 |
| 3 | 035.049.01 | O-ring pkg 10 |
| 4 | 036.003.03 | Yellow tubing, 1/8" OD |
| 5 | 024.162.01 | AVS tubing 1/2" ID |




**11.1127.01 Performer AVS with 7' Tubing (After October 1995)**

## Non-Autoclavable Saliva Ejector

| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.013.02 | O-ring (package of 10) |
| 2 | 030.002.02 | O-ring (package of 10) |
| 3 | 030.017.00 | O-ring |
| 4 | 036.003.03 | Yellow tubing 1/8" ID |
| 5 | 024.162.01 | AVS tubing 1/2" ID |




**Performer AVS (Before October 1995)**

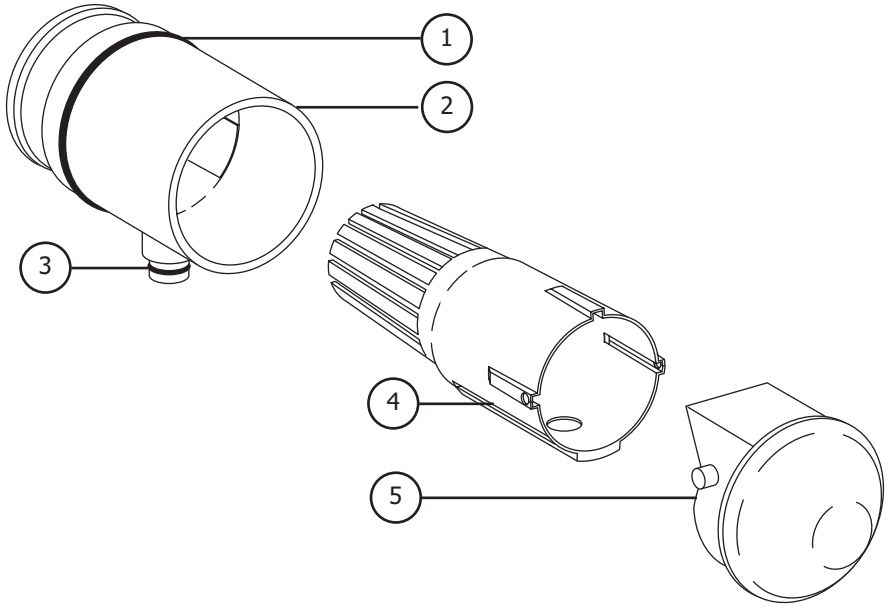
## Troubleshooting Water Saliva Ejectors

Tips and troubleshooting information are listed to assist in distinguishing water saliva ejector problems.

| Problem | Action |
|---|---|
| Water leakage at the saliva ejector body | Follow these points when water is leaking from the saliva ejector body.<br>• Tighten the nozzle.<br>• Replace the washer. |

## Single HVE Solids Collector

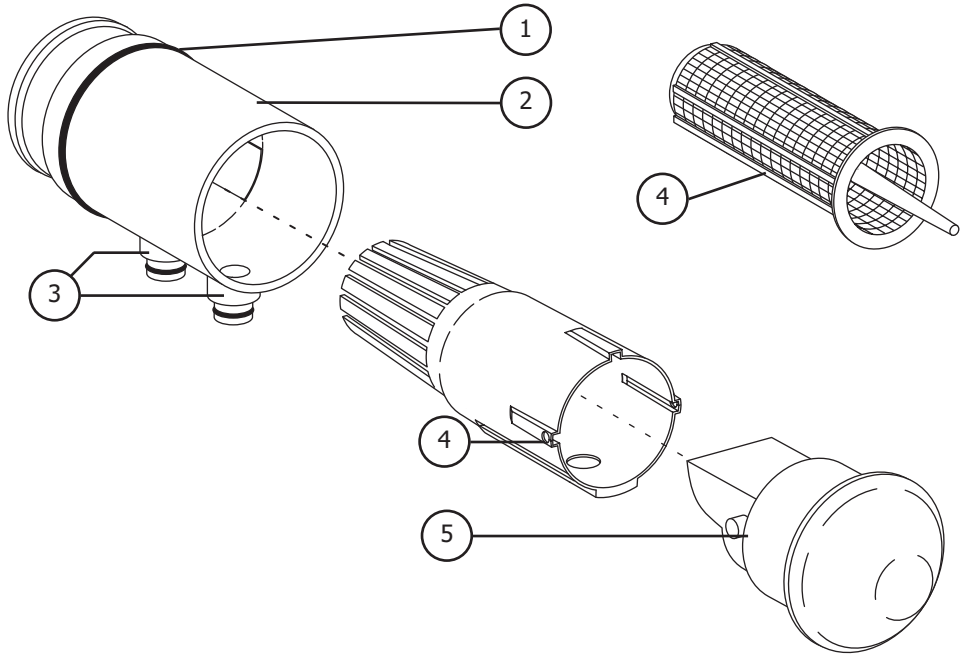
| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.027.01 | O-ring pkg 10 |
| 2 | 75.0078.00 | Vacuum canister, single |
| 3 | 030.014.02 | O-ring pkg 10 |
| 4 | 11.1007.00 | Vacuum screen |
| 5 | 11.1016.00 | Vacuum cap |
| — | 11.1017.00 | Vacuum cup and screen kit |




**Single HVE Solids Collector**

## Dual HVE Solids Collector

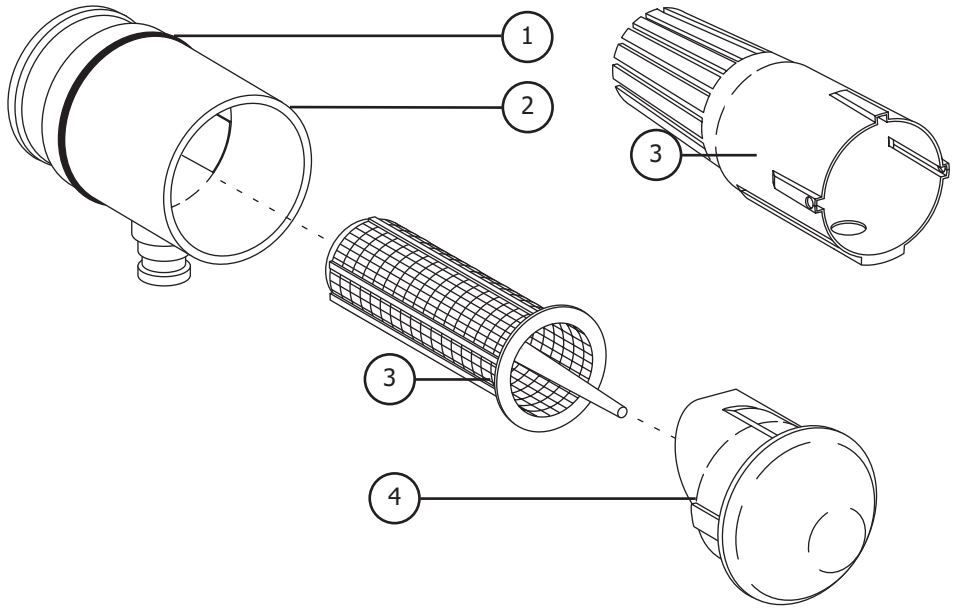
| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.027.01 | O-ring pkg 10 |
| 2 | 75.0932.00 | Vacuum canister, dual |
| 3 | 030.014.02 | O-ring pkg 10 |
| 4 | 11.1007.00<br>11.1191.00 | Vacuum screen<br>Vacuum screen, Pinnacle |
| 5 | 11.1018.00 | Vacuum cap |
| — | 11.1019.00 | Dual vacuum cap and vaccum screen |




**Dual HVE Solids Collector**

## 15mm HVE Cascade Solids Collector

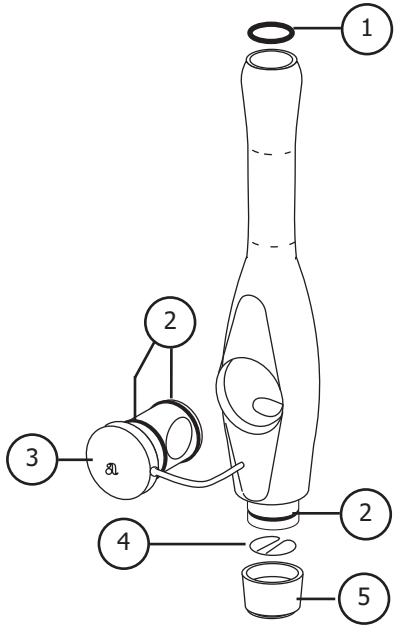
| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.027.01 | O-ring pkg 10 |
| 2 | 12.1123.00 | Vacuum canister, 15mm |
| 3 | 11.1191.00<br>11.1007.00 | Vacuum screen, Pinnacle<br>Vacuum screen |
| 4 | 11.1192.00 | Vacuum cap |




**15mm HVE Cascade Solids Collector**

## Autoclavable HVE with Long Tip Holder

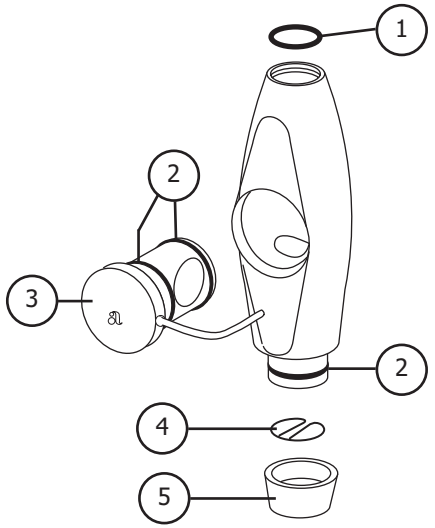
| Item # | Part number | Description |
|---|---|---|
| 1 | 034.013.01 | O-ring pkg 10 |
| 2 | 034.014.01 | O-ring pkg 10 |
| 3 | 11.1074.00 | Rotary assembly |
| 4 | 11.0998.01 | Screen pkg 5 |
| 5 | 11.1027.00 | Tailpiece, Dark Surf |




**11.1177.00**
**11.1178.00 (with 7' Dark Surf Tubing)**

## Autoclavable HVE

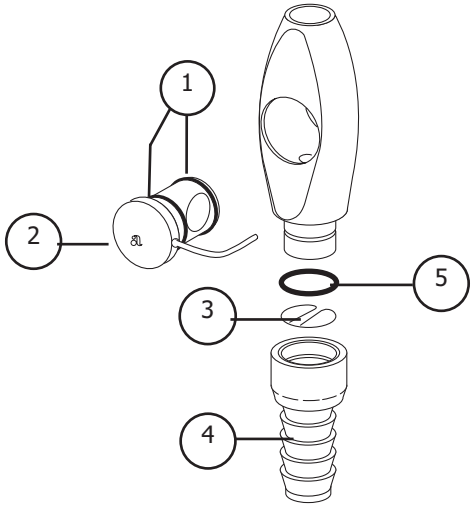
| Item # | Part number | Description |
|---|---|---|
| 1 | 034.013.01 | O-ring pkg 10 |
| 2 | 034.014.01 | O-ring pkg 10 |
| 3 | 11.1074.00 | Rotary assembly |
| 4 | 11.0998.01 | Screen pkg 5 |
| 5 | 11.1027.00<br>11.0989.00 | Tailpiece, Surf<br>Tailpiece, Gray |




**11.1075.00**
**11.1025.02 (with 7' Dark Surf Tubing)**

Autoclavable with 15mm HVE

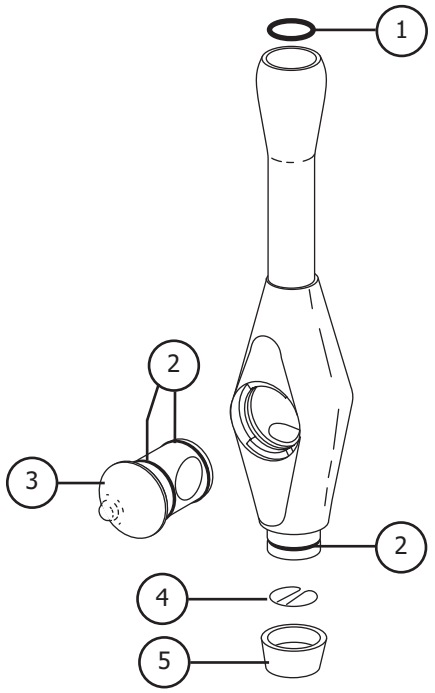
| Item # | Part Number | Description |
|---|---|---|
| 1 | 034.019.01 | O-ring pkg 10 |
| 2 | 12.1116.00 | Rotary assembly |
| 3 | 12.1109.01 | Screen pkg 5 |
| 4 | 12.1121.00 | Tailpiece |
| 5 | 034.018.02 | O-ring pkg 10 |




**12.1125.00**
**12.1132.00 (with 7' Tubing)**

## Non-Autoclavable Easy-Clean HVE with Long Tip Holder

| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.013.02 | O-ring pkg 10 |
| 2 | 030.014.02 | O-ring pkg 10 |
| 3 | 11.0983.00 | Rotary assembly |
| 4 | 11.0998.01 | Screen pkg 5 |
| 5 | 11.1027.00<br>11.0989.00 | Tailpiece, Surf<br>Tailpiece, Gray |

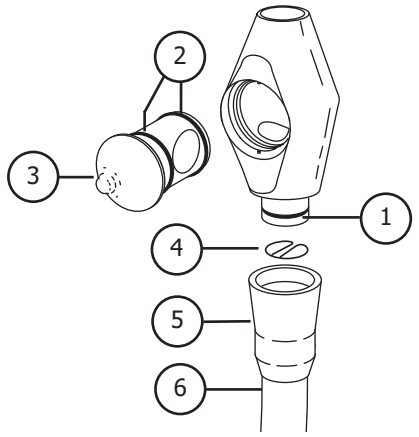



**Only Service Parts are Available**

## Easy-Clean HVE for 15mm Valve

## (Non-Autoclavable)

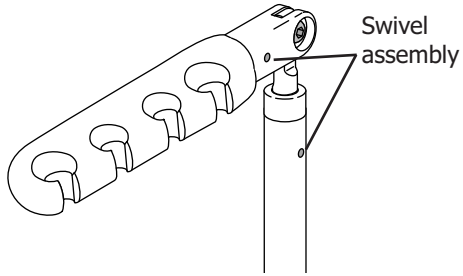
| Item # | Part Number | Description |
|---|---|---|
| 1 | 030.014.02 | O-ring pkg 10 |
| 2 | 030.016.02 | O-ring pkg 10 |
| 3 | 11.0994.00 | Rotary assembly |
| 4 | 11.0998.01 | Screen pkg 5 |
| 5 | 11.099200 | Tailpiece |
| 6 | 024.177.01 | Tubing, 5 mm, Dark Surf |




**Only Service Parts**

## Adjusting Holder Tension

Locate the holder tension adjustment setscrews on the holder and the assistant's arm. Adjust the setscrew tension until the desired resistance is achieved.

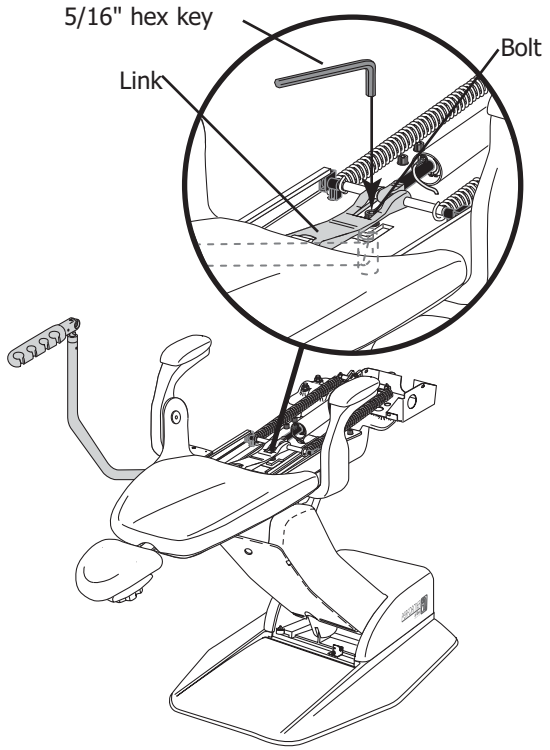



## Adjusting Tension on Assistant's Arm

Remove the chair seat/toeboard upholstery. Lower the chair back to nearly full down so that the gap in the link arm aligns with the mounting hole. Locate the assistant's arm mounting bolt. Turn the bolt until the desired tension is achieved.

- Clockwise to tighten
- Counterclockwise to loosen

Reinstall the chair seat/toeboard upholstery. Return the chair to the exit/entry position (back up/base down) by pressing "0" on the footswitch or touchpad.



## Troubleshooting Assistant's Instrumentation

Tips and troubleshooting information are listed to assist in distinguishing assistant's instrumentation problems.

| Problem | Action |
|---|---|
| Water or vacuum leakage at HVE valve | Follow these points to correct water or vacuum leakage at the HVE valve.<br>• Ensure rotary assembly is fully inserted into the o-ring groove side of the HVE valve body.<br>• Replace the o-rings. |
| Water or vacuum leakage at any of the assistant's instrumentation | Follow these points to correct water or vacuum leakage from the assistant's instrumentation.<br>• Ensure rotary assembly is fully inserted into the saliva ejector body.<br>• Replace the o-rings. |
| Water pressure is low | Follow these steps to correct low water pressure.<br>**Task** **Description**<br>1 Make sure air supply to the cap assembly is 40 psi.<br>2 Make sure the restricter barb (brass) is not plugged. Replace, if plugged.<br>3 Check the cap for damage. Replace if damaged or brittle. |

| Problem | Action |
|---|---|
| Air leaks from bottle/cap | Follow these steps to correct air leaks from the bottle/cap.<br>1 Make sure bottle is tight.<br>2 Check bottle threads for wear.<br>3 Make sure the 40 psi air supply tubing (yellow with green dashes) is not damage.<br>4 Check the restricter barb for leakage at the cap. |

# Conclusion

Thank you for taking time to use the *A-dec Service Guide*. We would appreciate any feedback or comments you have about this document.

Please mail, email or phone us with your concerns. You can reach us at:

A-dec Inc.
Technical Communications Department
2601 Crestview Drive
Newberg, OR 97132

Reach us by phone at: 1-800-547-1883
e-mail: techcomm@a-dec.com
website: www.a-dec.biz